ERIC Document Resume	See Instruction Sheet	DATE OF RESUME 6/21/65	DATE RECEIVED

A. PUBLICATION DATA

1. ERIC NUMBER	2. ORIGINATOR CONTROL NO(S).	3. IDENTIFICATION NO.
ED000093	7431	N.A.

DO NOT WRITE IN SPACE BELOW

4. AUTHOR(S): McGrath, Earl J.

5. TITLE OF DOCUMENT ABSTRACTED: Liberal Education in the Professions

6. PUBLICATION TITLE: N.A.

7. EDITOR(S): N.A.

8. PLACE OF ORIGIN: ORG. Teachers College; ST. Columbia Univ.; CITY. New York, N.Y.; TELE. EXT.; INST/LOC CODE

9. PUBLISHER OR SOURCE: Teachers College, Columbia University

10. VOL.	11. PAGES	12. MO./YR.	13. TOTAL PP.
N.A.	N.A.	59	63

MICROFILM COPY AVAILABLE: YES ☒ NO ☐

COPYRIGHT GRANTED: YES ☒ NO ☐

COPYRIGHT RELEASE FILED: YES ☒ NO ☐

TYPE OF REPORT: PROPOSAL ☐ IN-PROGRESS ☐ FINAL ☒ FOLLOW-UP ☐

OTHER ERIC REFERENCES:

ERIC SATELLITE CODE

B. INDEXING DATA

14. SUBJECT AREA

15. TYPE OF ENDEAVOR: report

16. INDEXING TERMS (6-12)

liberal arts	objectives	undergraduate edu.	
professional edu.	general education		
programs	Technical edu.		

17. ABSTRACT (MAX. 250 WORDS)

This monograph was designed to serve as the theoretical context within which individual reports of the Institute of Higher Education on the several types of professional programs and present institutional practices ought to be considered.

Discusses the need for reappraisal of both liberal and professional education, describes the changing character of both, and analyzes their present-day purposes. Summarizes the pros and cons of whether the purposes of general and specialized education are more likely to be accomplished under a plan in which both proceed concurrently, or under one in which general education is concluded before technical education is begun. Indicates that undergraduate professional schools vary widely in the degree of their efforts to reach the objectives of a liberal education and simultaneously to instill the knowledge, the technical skills, and the habits of mind and personality distinctive of a particular occupational group.

"A realistic review of the place of liberal education in American culture shows that its value can no longer be assessed in terms of a specific content or disciplines arranged in particular patterns or sequences. The major outcomes of liberal education—knowledge, intellectual skills, and an integrated and self-directed personality—are only achieved when these goals are clearly visualized and actually incorporated in the learning situation. If they guide the teaching process, these objectives can be reached as readily in the study of professional subjects as in the traditional liberal arts disciplines."

ERIC No.

18. SOURCE OF ABSTRACT

C. FUNDING DATA

19. SUPPORTING ORGANIZATION	20. DIVISION OR DEPT.	21. CONTRACT NO. / PROJECT NO.
	22. TOTAL COST OF PROJECT	
	23. DURATION OF PROJECT	U.S. Department of Health, Education, and Welfare, Office of Education

ERIC Form 1

Reporter 5.

V-15 R

LIBERAL EDUCATION IN THE PROFESSIONS

#7431

EARL J. McGRATH

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U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education

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5-15

PUBLICATIONS OF THE INSTITUTE OF HIGHER EDUCATION

Are Liberal Arts Colleges Becoming Professional Schools?
by EARL J. MCGRATH AND CHARLES H. RUSSELL

The Liberal Arts as Viewed by Faculty Members in Professional Schools
by PAUL L. DRESSEL, LEWIS B. MAYHEW, AND EARL J. MCGRATH

Liberal Education in the Professions
by EARL J. MCGRATH

Copies of these reports may be obtained from the
Bureau of Publications, Teachers College, Columbia University

HE7431

LIBERAL EDUCATION

in the

PROFESSIONS

EARL J. McGRATH

Executive Officer, Institute of Higher Education
Teachers College, Columbia University

PUBLISHED FOR THE

INSTITUTE OF HIGHER EDUCATION

BY THE

BUREAU OF PUBLICATIONS

TEACHERS COLLEGE, COLUMBIA UNIVERSITY

ED000093

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LC CARD NUMBER: 59:15189

MANUFACTURED IN THE UNITED STATES OF AMERICA

FOREWORD

UNDER A GRANT FROM THE CARNEGIE CORPORATION OF NEW YORK, THE Institute of Higher Education is now completing a study of the liberal education elements in the total programs of students in eight varieties of professional schools. They include agriculture, business administration, education, engineering, journalism, music, nursing, and pharmacy. In 1958 the graduates in these fields accounted for 52 per cent of the total first degrees awarded in the institutions of higher education in the United States. Education in other occupations deserves similar study, but because of limitations of time and money this inquiry had to be restricted to the foregoing.

Each of these fields has been the subject of an investigation by a member of the staff of the Institute or by an outside consultant. These persons visited selected institutions of each type and made personal inquiries among administrative officers, faculty members, and students concerning their attitudes toward liberal arts instruction and its place in the total education of future practitioners. Special attention was given in these visits to the forces on a campus which seemed to predispose the local faculty toward an interest in a broad or a narrow type of professional education. A wealth of relevant data will be reported on each of the eight professions in separate monographs to be issued during the fall and winter of 1959-60.

Many of the curricular problems with which these faculties are now concerned involve consideration of basic facts in the history of higher education, both liberal and professional; the evolving character of American society and the consequent changing demands on professional education (and liberal arts education as well); and realistic judgments concerning the desirable and the feasible in the preparation of practitioners for their occupational responsibilities, their civic obligations, and their private affairs.

This monograph is designed to serve as the theoretical context within

which the reports on the several types of professional programs and the present institutional practices ought to be considered. It records the views of the author, growing out of an analysis extending over a number of years, of the problems involved in merging the specialized subject matter related to the practice of a particular calling and the general education which all citizens must have to engage in the informed civic activities indispensable to the health and survival of a democratic society.

The one generalization which emerges from these considerations is that the sharp dichotomy which has prevailed for centuries in higher education between liberal and professional studies is no longer useful in advancing the cause of higher education; nor is it consistent with the facts of contemporary academic life in this country. The classification of instruction as liberal or vocational on the basis of course titles as, for example, calling a course in Virgil, liberal, and a course in business administration, vocational, is a misleading and status-seeking effort. The character and the quality of any instruction must be determined by its specific purposes, by its relationship to the whole context of learning, and by the methods employed by the teacher in teaching and by the student in learning. If all professional curricula are examined with these purposes in mind, new programs can be designed to cultivate simultaneously the varied knowledge, skills, and attitudes characteristic of a particular profession and that broad and generous education which is the hallmark of a cultured and intelligent human being. All instruction in professional curricula can be made to contribute—and should contribute—to these worthy ends.

The time has passed in American society when invidious and footless distinctions between liberal education and professional education can serve any purpose other than to obscure issues which urgently need to be clearly seen and intelligently dealt with. It is appropriate and timely now to consider the myriad programs in colleges and universities as integrated wholes preparing citizens for their work and for the more inclusive activities of life. By so doing much debate which now wastes the time and energy of educators can be obviated, and constructive steps can be taken to design a more satisfactory, a more complete, and a more defensible higher education for our times. It is to these ends that this treatise is dedicated.

EARL JAMES MCGRATH
Executive Officer

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Chapter 1

THE NEED FOR REAPPRAISAL

THE EVENTS OF THE PAST SEVERAL YEARS HAVE SHARPLY FOCUSED ATTENtion on the purposes and functions of American higher education. Stimulated by advances in science and technology in other parts of the world, educators and laymen have become particularly concerned with the merits of professional and technological education on the one hand and liberal studies on the other and, even more, with the relationships which should obtain between them.

The questions involved are ancient. As early as the fourth century B. C. Aristotle, in his *Politics*, expresses the prevailing differences of opinion about the purposes of education when he says, "The existing practice [of education] is perplexing; no one knows on what principle we should proceed—should the useful in life, or should virtue, or should the higher knowledge, be the aim of our training; all three opinions have been entertained. Again, about the means there is no agreement."[1] Ever since those ancient days partisans of both types of education have defended their respective merits. The debate continues today with renewed vigor and, for a number of reasons, it is timely.

First, the general public is agitated by the advances of the Russians in the fields of science and technology. Americans are raising questions about the reasons for what they rightly or wrongly consider to be the superiority of the Russians in the type of education basic to their startling achievements in the sciences. Though issues involved in these questions extend far beyond the boundaries of higher education, some of the more urgent problems as seen by many educators and thoughtful laymen are related to the functions and programs of colleges and universities.

Those who advocate an intensification of education in the professional and the semiprofessional vocations and in the fields of scholarship con-

[1] Aristotle, *Politics*. (B. Jowett, trans.) Book VIII, Chapter 2 (New York: The Modern Library, 1943), p. 321.

cerned with science have the onerous responsibility of describing how preparation for the other broad activities of life is to be adequately provided. Those, on the contrary, who stress the social and personal values of liberal education must realistically face the increasing need in the modern world for persons with advanced training in an occupational field—and to show how this is to be furnished in increasing measure. The significance of occupational education can be appreciated only when it is realized that a hundred years ago 75 per cent of all professional men and women were engaged in four fields: medicine, law, theology, and teaching. Now there are twenty-two hundred occupations requiring highly trained manpower, and ten to twenty more are added annually. As valuable as education in the liberal arts may be, it cannot provide the specialized training required by those who are employed in these new vocations. It is necessary and reasonable, therefore, to reconsider the full complement of educational services these highly skilled workers must have if they are to be vocationally efficient and civically competent.

Second, for several decades the proportion of all college students attending professional units in colleges and universities has mounted steadily. Many of the present schools, such as those in business administration and journalism, were inconspicuous if not completely missing in the total enterprise of higher education at the turn of the century. There were, for example, only three schools of business before 1900, enrolling a mere handful of students. Now tens of thousands of students attend several hundred such institutions. The growth of the divisions of colleges and universities devoted to the various forms of education directly related to an occupation is evident from the enrollments in these institutions. Dael Wolfle[2] has shown that in 1901, of all the first degrees granted, the aggregate of those in business, agriculture, education, and engineering was only 4.1 per cent of the total awarded by all types of institutions. By 1951-53, however, the corresponding figure had risen to 46.4 per cent, or almost half the first degrees awarded. If these students are to receive any education other than that which prepares them for their occupational activities, this general education must in some manner or other be made an integral part of the professional program. There are many issues in this merging of two sets of educational objectives which deserve thoughtful analysis on the basis of which systematic planning can take place.

Third, although the series of questions involved in establishing the proper proportions and relationships between the professional and the liberal education of college-going youth most obviously apply to the uni-

[2] Dael Wolfle, *America's Resources of Specialized Talent* (New York: Harper and Brothers, 1954), p. 292.

versities, these queries must also be answered by the faculties of liberal arts colleges. These older units in our system of higher education, like their sister institutions, have in the past several decades inaugurated a wide variety of professional and semiprofessional curricula. Another study conducted by the Institute of Higher Education[3] has revealed that some independent liberal arts colleges offer more than twenty vocationally oriented programs leading to one or another bachelor's degree—and that virtually every such institution provides some instruction of this type. Moreover, the specialization in the various conventional liberal arts departments has now become so intense that to all intents and purposes these programs are no less vocational than their counterparts in schools of engineering, business administration, and teaching. If, therefore, the graduates of the liberal arts colleges are to leave these institutions adequately prepared to live intelligently and effectively in the larger sphere of life outside their occupation, the same questions which are matters of consideration in the separate professional schools must be raised concerning the relationship between general and specialized education in liberal arts colleges.

Fourth, there is increasing concern among our citizens about the rising cost of higher education in money and time. Medical education is the prime example of the steady lengthening of the course of formal study and the consequent increase of the financial burden on the student and his family. As late as 1900 young men could enter a medical school with no more than a secondary schooling and complete the medical course in two academic years considerably shorter than they are at present. Now the average for premedical and medical education is eight years, to which are added varying but usually long periods of internship or residency.

In some schools of education, nursing, pharmacy, and commerce, and in other professional fields as well, formal education has been extended to five or six years. Serious social problems are involved in the steady extension of preemployment education. There are curtailments of earning capacity, maladjustments in personal and family life, and an often unrecognized selection of individuals whose parents are in the social and economic groups which can afford the large capital investment required to complete a long professional course of study. This investigation is only tangentially concerned with these latter matters. It is, however, directly concerned with the related question as to whether a more carefully considered plan for the total education of the individual, involving a clarification of the purposes and character of both liberal and professional educa-

[3] Earl J. McGrath and Charles H. Russell, *Are Liberal Arts Colleges Becoming Professional Schools?* (New York: Bureau of Publications, Teachers College, Columbia University, 1958.)

tion, could not keep the scope of higher education within more reasonable and defensible bounds.

Finally, developments in adult education now provided by almost all institutions of higher education, and the opportunities for continuing education of high quality within commerce and industry, make necessary a reexamination of the amount and kind of higher education a prospective practitioner needs before he enters upon his intended life work. With the wealth of postgraduate educational opportunities now available, all baccalaureate curricula, both those in professional schools and in liberal arts colleges, require critical reappraisal to determine as objectively as possible which educational functions can most properly be performed before graduation and which can most profitably be conducted after the individual actually assumes his vocational responsibilities. A review of these matters again requires a reconsideration of the relationships between the various types of instruction now offered in undergraduate programs which too often operate under the fallacious assumption that the student's education does, and necessarily must, conclude on the day of graduation.

These, then, are the chief reasons for the present study of the curricula of selected undergraduate professional units in colleges and universities. Before undertaking the detailed analyses of various institutional policies and practices which constitute the major purpose of this study, it was necessary to explore the meaning and purpose of liberal and professional studies and to establish a working basis for properly interrelating these dual educational functions in an integrated whole.

In considering a desirable preemployment higher education for vocational competence, one must begin with the assumption that such education is necessary and desirable in the United States today. To some this suggestion may appear obvious and fruitless. Yet many educators and laymen, too, question the whole concept of an undergraduate education to earn a living except as general, nonvocational instruction may provide that preparation. They would be satisfied with, or even prefer, either no training other than that provided on the job, or a formal vocational education beginning at the postbaccalaureate level. Such a concept is unrealistic because of the over-all purposes of higher education in our democratic society with its increasingly complicated economic structure and its mounting demands for higher education for individuals of ever more varied abilities, interests, and vocational objectives.

If the existence of the undergraduate professional schools is justified, there can be no question that they must prepare students for their prospective work in a particular family of occupations. If the baccalaureate curriculum in commerce, for example, is not related to the activities of busi-

ness enterprise, its existence *per se* cannot be justified. Some of those who have analyzed the need for education for business, and for other vocations as well, have advocated programs of studies so general that the *raison d'être* of a school of commerce is denied by the very breadth and remoteness from business activities of the studies they recommend. Such proposals really obviate the need for specialized education, or at least reserve it for graduate study or on-the-job training.

Even if such views were defensible in the abstract, they are unrealistic. The undergraduate professional units of our colleges and universities are firmly established in the academic structure and in the minds of our people. They are here to stay. They will be augmented by others in the years ahead. Enrollment trends in institutions of higher education show that undergraduates in professional schools increasingly outnumber those in liberal arts colleges. Hence, the meaningful question to be asked about the professional schools is how their offerings can be patterned to meet the needs of youth who have at least a tentative vocational objective, but whose education must be so designed as to prepare them to act as intelligently in the broader contexts of life as within the spheres of their own work.

A review of the emerging characteristics of the American economy and the history of higher education supplies convincing evidence that the number and the variety of baccalaureate programs with a specific occupational orientation will inevitably increase. It is important, therefore, that steps be taken now to justify the assumption that undergraduate professional schools will have both vocational and general objectives and that these aims will be clearly reflected in the structure and the content of the curriculum. The compelling responsibility of those who determine the character and substance of undergraduate professional education is to design curricula which prepare the individual concurrently for a specialized calling and for the other varied activities of life. At first sight these broad purposes might appear to be visionary and unattainable within the normal four- or five-year period. If, however, only clearly comprehended and essential purposes control curriculum planning, and if all instruction which does not manifestly contribute toward the attainment of these twin objectives is cut away, a defensible program can be designed. The success of such an effort will, however, be dependent on the acceptance of the basic principle that the professional course of study ought to be a whole in which traditional liberal arts instruction and the technical courses related to a particular occupation are joined to provide the full and relevant higher education appropriate to the needs of our times.

Chapter 2

LIBERAL EDUCATION

BEFORE ONE CAN DETERMINE THE POTENTIAL CONTRIBUTION OF LIBERAL education to the complete education of a professional student, its changing meaning through the ages must be examined. A review of the history of liberal education will show that its purpose and substance have changed from age to age in accordance with the demands made upon it by contemporary society, and that the changes have been more rapid and more basic in the past century than before. Such a review will also show that those who recommend going back to earlier forms of liberal education have a responsibility to explain which of the many varied preexisting forms they mean. The most valuable lesson such persons can learn from a survey of liberal education through the centuries is that it is impossible to return to any of the types of liberal education which flourished before the college curriculum in the modern period began to respond to the social needs of the times. Today's teachers of the traditional liberal subjects ought to be the first to recognize this fact, because it was through their scholarly activities and the efforts of their predecessors to gain a place in the sun that the old, more or less standard, liberal education was extinguished.

A review of the history of liberal education will be most profitable if in regard to various periods it attempts to supply answers to three questions: For whom was it designed? What was its content? What were the intended functions of its recipients in the society of their time?

THE CHANGING CHARACTER OF LIBERAL EDUCATION

If these same questions were asked concerning liberal education at the various stages in its evolution, from the days of ancient Greece to the present, much of the confusion which now invests this important subject would vanish. At the outset it can be stated as a general proposition that informed answers to these questions show that education has been vital and

effective when it has been concerned with the real life of the period, and lifeless and fruitless when it attempted to preserve culturally outmoded forms and practices whose reason for being had passed. No epoch in the life of man better illustrates this close relationship between society and education than ancient Greece.

Plato first formulated some of the fundamental ideas which have dominated discussions of the purposes and content of higher education for centuries. As they try to come to grips with the current problems of higher education the thinking of many today continues to be suffused with these conceptions. Hence some of the basic principles in Plato's thoughts on education deserve critical examination.

In answering the question, for whom was liberal education designed in Athens, one must consider the character of Athenian democracy during its cultural apogee. The citizens of that city-state in the fifth century B.C. placed great value on the freedom and the dignity of the individual citizen and on his right to think for himself. It is not surprising, therefore, that the higher education then available was provided by the most controversial, the most imaginative thinkers of the day, of whom Plato was the paragon. There was no formal university or college structure like our own, the later creation of the corporate life of the Middle Ages. Students sat at the feet of any teacher whom they considered capable of extending their knowledge and nurturing their wisdom. The beneficiaries of this education were members of the social elite, the upper five or ten per cent of the members of the civic community, for even the Athenians, who prized human freedom, paradoxically limited the rights and responsibilities of citizenship to ten per cent or less of the population. The others were second-class citizens or slaves.

It is important to observe that though Plato's ideas on Athenian higher education had a definite intellectual emphasis, those who enjoyed its advantages were expected to lead a life not of sedentary scholarship, but, rather, one of active citizenship. They were destined to become the intellectual, social, and political leaders of a clearly aristocratic society. Since all educational systems in any age have as their primary purpose the preservation of a way of life, it was natural that Athenian society should favor an upper-class educational system to perpetuate itself. This fact deserves thoughtful attention in evaluating the arguments of contemporary critics who, often unwittingly, advocate a highly selective higher education for an American democracy totally different in its social and political organization from that of Athens or even of twentieth century Europe. The education advocated by Plato, and with some modifications by his distinguished pupil Aristotle, was designed for a small directive class.

What was the content of this education? Plato's system consisted of a body of doctrine and intellectual procedures based on his idealistic philosophy. He held that concepts of truth, justice, and beauty were eternal and that the aim of education and of life was to discover these enduring patterns of reality and to use them in determining the ends of individual and social living. For the intellectual elite, the philosopher-kings, a clearly defined sequence of studies was prescribed. Though the subjects prescribed by Plato consisted first of gymnastics, music, and grammar, and later arithmetic, geometry, astronomy, and musical harmony, and philosophy or dialectics as the capstone, the intellectuals of the heyday of Greek culture were interested in all aspects of life as the works of Aristotle in science, social science, poetics, and indeed all other subjects so clearly show.

After Philip of Macedon finally subjugated the Greek city states in the Battle of Chaeronea in 338 B.C., the practical application of learning to the responsibilities of citizenship faded away. Hence, the educational ideal of the informed and intellectually capable man of action was displaced by the conception of one of detached intellectualizing about the problems of human existence. Education became associated more and more with the passing on of a culture grounded in literary, artistic, and intellectual activities for the members of a leisure class, a group wholly divorced from manual labor or any of the ordinary activities of the average citizen today.

Aristotle gave support to this view by asserting that the citizen must be economically as well as politically free. Work was considered degrading, and any education concerned with vocational activities was *ipso facto* illiberal and hence unfit for free men. Though Aristotle admitted the need for "useful" education, he placed it in a class lower than that which was "liberal," for he says that "there are branches of learning and education which we must study merely with a view to leisure spent in intellectual activity, and these are to be valued for their own sake; whereas those kinds of knowledge which are useful in business are to be deemed necessary, and exist for the sake of other things."[1] All protestations to the contrary notwithstanding, this tradition with its implied social distinctions continues to prevail in American higher education today, especially among the institutions on the eastern seaboard. Since the two social systems—that of ancient Athens and that of the United States of the mid-twentieth century—are completely different, this doctrine is at the basis of much of the confusion in current discussions of higher education.

[1] Aristotle, *Politics.* (B. Jowett, trans.) Book VIII, Chapter 3 (New York: The Modern Library, 1943), p. 323.

What kinds of human beings was the Greek conception of education designed to produce? In theory at least, and at first in practice, they were men of action in the upper reaches of social responsibility, but men informed at least within the restricted range of extant knowledge, skilled in the use of the powers of the mind, and refined in aesthetic taste. Later they were men of limited participation in the affairs of the day, but yet practiced in the arts of the intellectual life. They had identified many of the continuing problems of human existence. They had acquired the habit of critical analysis and sustained reflection on these and other matters which engaged their attention.

The Romans made little or no contribution to the enlargement of the concepts of liberal education. In the pre-Hellenic era the Romans confined education to such practical matters as those related to agriculture, law, and engineering. They were somewhat modern in their recognition of individual differences among students and in their offering of a wide variety of higher studies. After the establishment of the Empire, education in Rome was considerably influenced by the educational conceptions which prevailed after the halcyon days of Greece.[2] Indeed, Cicero, the Roman who most systematically presented his views on the education of the free man, exhibited his indebtedness to Hellenism. As the Empire was consolidated and life stabilized under the dominance of a directive group, the Romans imitated the Greeks in designing an education suitable for the activities, and appropriate to the status, of a leisure class.

Hence, when the question is asked, for whom was higher education in Rome designed, the answer must be that in the Roman, as in the later Greek period, higher education was designed for and limited to a selected, aristocratic group of students, the sons of an elect citizenry. Liberal education was intended to prepare them for a life free from manual labor and even from many occupations represented in the professional schools and liberal arts colleges in the United States today. They were considered beneath the dignity of a free citizen.

The details of the transitional changes in educational practice from Greek to later Roman conceptions in the early centuries after Christ are not particularly germane to the present discussion. Nevertheless, it is important to observe that by the fourth century A.D. Martianus Capella had formulated the seven liberal arts which were adopted and preserved for centuries by the Christian Church, through the efforts of Cassiodorus. In modified form these subjects—known after Alcuin as the trivium and

[2] In the preparation of this section on Greece and Rome, the author is indebted to R. Freeman Butts, whose *The College Charts Its Course* (New York: McGraw-Hill Book Company, Inc., 1939) is an invaluable source on the early beginnings of liberal education in Western culture. See especially Chapter 2, pp. 19–38.

quadrivium—became the core of higher education for a thousand years. This curriculun. was designed primarily to serve the needs of future members of the clergy, particularly the leaders of ecclesiastical society.

By the beginning of the Middle Ages the content of liberal education had thus been standardized. It was concerned largely with intellectual and spiritual rather than with practical affairs. It established in another form the Greek separation of the intellectual and the literary on one hand from the practical and mundane on the other, a cleavage of educational purposes that has persisted down to the present. The curriculum consisting of the trivium and quadrivium endured with only minor changes through the Middle Ages with the addition, after the founding of the universities in the eleventh and twelfth centuries, of studies concerned with the philosophy of Aristotle.

In this brief sketch of the evolution of liberal education it is now necessary to pass to the period before the traditions of English university life were transplanted to the Western hemisphere, that is, before the Renaissance. An examination of the purposes and character of British higher education during this period will illuminate many of our own present practices.

In the early days of Oxford and Cambridge, that is, from the thirteenth through the fifteenth centuries, students pursued a four-year program of studies leading to the B.A. degree, which consisted essentially of the original seven liberal arts of the early Middle Ages modified by the inclusion of the three branches of Aristotelian philosophy. For whom was liberal education in the early days of Oxford and Cambridge designed? This education, unlike that of Greece and Rome, was not calculated to serve the needs of an aristocratic minority, a leisure class. On the contrary, it attracted ambitious youth of the lower classes for whom it was almost the sole avenue to the preferred occupations—teaching, preaching and, to a lesser extent, the law. As Samuel Eliot Morison, Harvard historian, says:

> The Medieval Arts course, with its overemphasis on Dialectic and Philosophy, served mainly those destined for the Church and the Law; it was too "practical" an education to be of much value for anyone else. The English colleges of the thirteenth to the fifteenth centuries were founded in order to enable poor but deserving scholars to enter the Church, not for the general education of gentlemen's sons, who at that time were too earnestly engaged in exterminating one another to have time for study.[3]

Thus it is evident that in the first centuries of the British universities they served a clientele which consisted largely of the sons of families of little or no wealth, youth who lived simple lives supported by incomes from en-

[3] Samuel Eliot Morison, *The Founding of Harvard College* (Cambridge: Harvard University Press, 1935), p. 51.

dowments or by wealthy patrons of learning. In this respect the British universities of the medieval period served a clientele very much like the students who attend American colleges and universities today. This fact is seldom brought out by those who endorse the aristocratic educational conceptions of the Renaissance and succeeding periods.

In the course of several centuries, however, the clientele of higher education changed again. Those who sought advanced learning, regardless of profession, considered the curriculum in the liberal arts the essential ingredient of an intellectual and cultured life, and the B.A. degree became once more not only the mark of a liberally educated man, but the insignia of high social status. With the rise of the mercantile classes and the consequent emergence of a society of "gentlemen" the charcter of the student body, their social standing, their financial resources, and their occupational ambitions changed markedly.

As early as the sixteenth century, classical Greek was being studied at Oxford as a language and a literature. With the founding of new colleges at Oxford and Cambridge in the early sixteenth century, humanistic studies became firmly established. Moreover, the ideals in the philosophy on which the Italian schools of Vergerio of Padua and Vittorino da Feltre were based became a part of the tradition of humane learning. Speaking of these influences on liberal education, Morison observes:

> Vergerio of Padua struck the Hellenic note when he defined a liberal education as one that "calls forth, trains, and develops those highest gifts of body and of mind which ennoble men, and which are rightly judged to rank next in dignity to virtue only." We should be happy indeed if our present colleges fulfilled Vergerio's ideal.[4]

The men of the Renaissance discovered and became enamored of the literary and the philosophical works of ancient Greece. Through their influence the logic and dialectic were reduced to a less prominent position in liberal education and the grammar and the rhetoric of the ancient tongues were restored to their earlier preeminence. This status they continued to enjoy in American colleges and universities well into the nineteenth century. Both subjects during this period of humanistic influences lost their medieval coloration. Grammar included the study of the languages and literature of Greek, Latin, Hebrew, and Oriental tongues, and rhetoric reflected the concern of the humanists with style and form in both oral and written expression. In all these changes one basic fact stands out. As higher education became identified with the ancient classics and was once again looked upon as "polite learning," the original Greek conception of liberal education for an aristocratic life of social leadership and the activities of a leisure class became firmly reestablished.

[4] *Loc. cit.*

If the social elite of seventeenth-century Britain could not be characterized as a leisure class in the Greek and Roman sense, they were at least the leaders of a nation in which higher education was the avenue to positions of preferment and to liberation from the lowly and arduous vocations of the mass of men. Once again liberal education was designed to serve the lives and activities of the social elite, now religious as well as secular. The content of liberal arts education, consisting of the ancient languages, philosophy, and religion, was standardized to serve such a culture, and the products of this tuition were prepared for the specific duties they were to perform as members of a small professional group and as dominant members of the existing order.

Meanwhile another emergent cultural influence had begun to reshape the medieval curriculum and to widen the gap once more between mundane and polite learning. The Renaissance spirit of unrestrained inquiry came to dominate the thinking of educated people, and the demand for intellectual and religious freedom spread from Italy throughout Western Europe with profound effect on university life. This movement was accompanied by a reemphasis on urbane living in the aristocratic class.

This reinstatement of the education of the gentleman, the man of affairs free from the ordinary work of the world, had a decisive influence on higher learning in America. By the time of the founding of Harvard College, English university education, serving more and more the propertied and merchant classes, had adopted appropriate measures to "teach manners to the boy of gentle or wealthy birth, and prepare him to take his place in the governing class."[5] Once again higher education became increasingly limited to a select group of citizens, usually though not unexceptionally, possessed of high intellectual ability but definitely headed for high social position and a status exempting them from manual labor and the demeaning activities of the rank and file.

Therefore, when one asks the question, for whom was education designed in early America, the answer must be that with the establishment of Harvard College the prevailing British aristocratic conception of education and the society it was to serve was transplanted into the soil of New England. Colonial Massachusetts was no egalitarian commonwealth with equal educational opportunity for all regardless of birth or position. In this New World community the ideal of even an *elementary* education was not realized for all children until the days of Horace Mann some two hundred years later. The objectives of the Puritan educational system, if it could be called that, clearly reflected the stratified class structure which sustained it.

[5] *Loc. cit.*

Morison has characterized the highly selective system of education that for two centuries was to preserve the essentially class character of early American society as one in which,

> Children must learn to read the Bible, that they might know God's truth, and to write and cipher, as an aid to honest living; chosen boys must be taught the learned language in which the world's best thought and literature were still to be found; and a smaller selection of youths must be given university training, in order to furnish the State with competent rulers, the Church with a learned clergy, and society with cultured men.[6]

The content of this early American college curriculum was much like that of its counterpart in England. The curriculum through the study of which the dominant social and religious goals were to be reached is preserved in a document issued by Harvard College in 1642. Without attempting a complete review of the subjects then pursued by students in the mother institution of higher education on these shores it should be pointed out that they included much of the subject matter of the original seven liberal arts, with the addition of Aristotelian ethics, logic, politics, and physics. Instruction in the Bible was required throughout the four years. Like its English progenitor, this higher education was designed to produce men capable of taking places of leadership in the church, the law, education, and the civic affairs of a primitive society.

No useful purpose would be served by tracing the relatively minor changes which occurred between the founding of Harvard in 1636 and the beginning of the nineteenth century. The Laws of Harvard College for 1798, which in educational philosophy and practice differed very little from the few other existing institutions, show unmistakably the influence of the classical liberal tradition on colonial colleges and their offspring. Indeed the curriculum of Harvard College, even as late as the second quarter of the nineteenth century, resembled its forebears of five hundred years earlier much more closely than it resembled the Harvard curriculum of 1958.

It must be obvious that the varieties of liberal education thus far described were designed to serve cultures basically different from our own contemporary society. Some may nostalgically yearn for a return to the days when a common pattern of liberal education was generally accepted among men of learning, but they cannot logically propose such a step without also advocating a return to the social conditions in which this type of education flourished. This, few Americans would be willing to do.

During the late nineteenth and early twentieth centuries liberal education was to undergo a metamorphosis more profound than any since the

[6] Morison, *op. cit.*, p. 150.

birth of European universities in the eleventh century. The purposes of these institutions, the content of their instruction, the social origins of their students and their prospective occupations, were to be revolutionized.

Within the brief period of one hundred years institutions of higher education in this country were to be transformed (1) from schools attended by a small and socially select group of young men to colleges and universities serving nearly a third of the nation's youth of both sexes; (2) from institutions with a curriculum of only three or four subjects divided into thirty or forty courses to those often embracing thirty or forty schools, with dozens of curricula splintered into thousands of courses; (3) from colleges offering almost exclusively a liberal education to others providing not only a completely different education in the traditional liberal arts subjects, but a host of professional, technical, and vocational courses as well; (4) from institutions whose graduates usually entered one of four or five occupations, largely the so-called learned professions to others whose alumni are now found at all levels and in all walks of life from labor leader, farmer, and lawyer, to physician, housewife, and statesman. This has been a social revolution in which higher education has been transformed.

If one asks the question, for whom is higher education designed today, the answer must be that it serves nearly a third of American youth from all levels of society, with the widest range of economic, social, and intellectual interests, and with an infinite variety of vocational goals. This student body is completely different from any that has ever existed before in history, in Greece, Rome, England in the late Middle Ages, or the United States through the late nineteenth century. It is not surprising, therefore, that the instruction they receive is also different in purposes and in substance.

The content of the liberal arts curriculum itself has during the past century undergone a most profound change. Indeed the transformation has been so radical as to create an almost completely different institution, one which its patrons of 1850 would hardly recognize. The classical languages and literatures which then constituted three-quarters of nearly every college student's education are now inconspicuous departments in most colleges and conspicuously missing in others. Much of the college mathematics of that day is now taught in high schools, and in the colleges dozens of advanced mathematics courses now take its place. Except in sectarian institutions the formal study of religion has been almost completely eliminated, and in many publicly supported institutions such instruction is constitutionally or legislatively banned. In the place of this compact curriculum of an earlier day devoid of any elective studies, the student today, even in the small liberal arts colleges, finds a limitless vari-

ety of courses of ever narrowing scope, many in departments of knowledge totally nonexistent in the nineteenth century. The catalogues of university-connected liberal arts colleges now display hundreds of courses, many of which have nothing in common. When students randomly assemble these varied courses in a curriculum, the members of graduating classes have little more in common educationally than the titles of their degrees.

The principal factors in this basic change in the character of liberal education were the growth of knowledge and the increasing power of the representatives of the ever narrowing subjects into which it was divided. In the nineteenth century intellectual activities of profound significance occurred in the sciences, the social sciences, and indeed in all other subjects. As these subjects burgeoned through the research activities of scholars, new subject matter added enormously to the bulk of extant knowledge. For decades, beginning in the early nineteenth century, proponents of the sciences made earnest efforts to gain a place for their subjects in the American academic sun. But the entrenched classicists were for a time as successful in keeping science out of the liberal arts curriculum as were the firmly established medieval philosophers several centuries earlier in excluding the then new humanistic disciplines.[7] One would be remiss in any serious discussion of the history of curriculum making if he failed to remark parenthetically that every subject from Greek to French to physics to sociology to education has had literally to force itself into the curriculum against the prejudices of vested academic interests.

But by the end of the Civil War, largely under the influence of Americans who had studied at German universities, the sciences gradually gained membership in the family of respectable academic subjects. For several decades, however, students who pursued these subjects were given the degree of Bachelor of Science, openly described in college catalogues as inferior to the Bachelor of Arts degree. The modern foreign languages, paradoxically, like the sciences, had to overcome the opposition of the teachers of Greek and Latin, but they also finally gained acceptance. But to maintain an invidious distinction between the Bachelor of Arts and its younger competitors, still another degree, the Bachelor of Philosophy was created for those who chose to study *modern* rather than *ancient* languages.

Nevertheless in spite of counterforces, once the dike impounding the rising headwaters of new knowledge had broken, the college curriculum was inundated by oceans of subject matter in the newer disciplines as well

[7] For the most persuasive and influential statement against the introduction of new subject matter into the traditional college curriculum, see Yale Faculty, "Original Papers in Relation to a Course of Liberal Education," *American Journal of Science and Arts,* Vol. 15 (January, 1829), pp. 297-351.

as in the rapidly multiplying subdivisions of the older. An objective examination of the historical facts shows conclusively that the growth of new knowledge in academic fields, and not the intrusion of vocational subject matter (a development largely of the twentieth century deplored by some today), disintegrated the traditional pattern of liberal education in this country. To be sure, forces had been at work since the days of Benjamin Franklin and Thomas Jefferson urging a more practical education even in the liberal arts colleges. But until the hitherto impregnable ramparts of the standard curriculum of the early nineteenth century had been stormed by the forces of new academic subjects, the company of classical disciplines remained closed. The physical and biological sciences, the modern languages and, later, history, economics, sociology and the other social sciences, were as a rule not admitted; and even when they were, the traditionalists deprecated them. Within several decades, however, these subjects received grudging admission to the company of respectable subjects. Moreover, after 1900 they were joined by an increasing variety of new instruction with a clear vocational orientation. Another study of the Institute concerned with this trend toward the practical shows that though little professional or vocational work was offered in liberal arts colleges in 1875, by 1950 these institutions, even the small colleges with no graduate or professional schools, offered degree programs with majors in a host of distinct occupational fields.[8] Any observer of the trends of the past half century in the offerings of institutions of higher education must be irresistibly driven to the conclusion that no particular curriculum pattern any longer exists that can be exclusively identified as liberal education. A study of the attitudes of faculty members in professional schools toward liberal education shows that the failure of liberal arts colleges to identify the basic elements in liberal education is one of the principal obstacles to the inclusion of liberal studies in professional curricula.[9] No one seems any longer to be able to describe the essential subjects in a liberal education; consequently professional students who must select studies in the liberal arts colleges find themselves in courses often more specialized and fragmented than the instruction in their own school, and in courses which have a vocational objective, but one different from their own.

These changes within the academic enterprise itself were accelerated

[8] Earl J. McGrath and Charles H. Russell, *Are Liberal Arts Colleges Becoming Professional Schools?* (New York: Bureau of Publications, Teachers College, Columbia University, 1958).

[9] Paul L. Dressel, Lewis B. Mayhew, and Earl J. McGrath, *The Liberal Arts as Viewed by Faculty Members in Professional Schools* (New York: Bureau of Publications, Teachers College, Columbia University, 1959).

in the nineteenth century by forces at work in society at large. The ascendancy of Jacksonian philosophy, and the ever widening influence of the industrial revolution, with their train of economic and political consequences, caused a larger and larger percentage of American youth to seek higher education. The growth of economic wealth, the passage of the Land Grant Act in 1862, and the zealous establishment of colleges by religious denominations almost before the frontier had been settled, brought higher education within the reach of youth who in the old country would have considered themselves social radicals to think of elevating their status in life through learning.

Even as late as 1900, however, the increase in enrollments in colleges and universities over earlier years was not considerable. In that year only one in twenty-five young people of college age was attending such an institution. But by 1950, the comparable figure was one in four. The new masses of students who began to enter colleges and universities in the first half of the twentieth century varied much more widely than their predecessors in social background, in academic interests and abilities, and in vocational goals. The kinds of employment available were constantly multiplied by the increasing complexity of American commerce, industry, the professions, and the social and governmental services. Observing the emergence of new vocational opportunities, college students of the twentieth century demanded, and were supported by the organized agencies of society in their request for a more diversified college education. They obtained it!

The impact of all these social developments profoundly altered the liberal arts college. Though it continues to bear the same name, or some variant thereof, it differs almost completely from its Hellenic and Renaissance predecessors. The curriculum of several centuries earlier known as The Seven Liberal Arts by 1950 had irretrievably passed from the scene.

This is the condition of liberal education today with which those in professional education must be familiar as they go about the difficult task of constructing a curriculum inclusive of subject matter outside the technical area with which they are concerned. Liberal education is no longer designed for a small percentage of the population, the socially elite. It serves youth from an ever widening range of social status. It no longer has a standard content of limited subject matter. It is composed of an infinite variety of subject matter assembled often by caprice or accident in permutations defying calculation. If, therefore, the professional schools expect their students to gain acquaintance with a common body of facts, principles, and methodological procedures they will have to specify what these are to be, and insist that liberal arts faculties provide the appropriate in-

struction. Lastly, liberal education is no longer intended solely for the directive classes. It now serves legions who will take their places among the growing mass of educated men and women, some of whom will rise to the top of their professional and social groups; many others will live less prominent, but no less worth-while lives as productive and civically competent citizens.

Liberal Education Today: Its Purposes

Since the meaning and content of liberal education have changed from age to age, any profitable consideration of the purposes of liberal education today, especially as a constituent element in an undergraduate professional curriculum, must begin with an analysis of the major purposes of contemporary American society. It would be desirable but doubtless impossible to arrive at a generally acceptable definition of liberal education. Perhaps, therefore, larger agreement can be reached through a description of the types of abilities and traits of personality liberal education might be expected to engender in those who have been subject to its influence.

TO PROVIDE ESSENTIAL KNOWLEDGE

First, American society needs today as never before citizens who are as fully informed as possible about the social and the physical world in which they live. It would be generally agreed, therefore, that those who have had a liberal education should possess a broad knowledge of the various major areas of learning—the natural sciences, the social sciences, and the humanities, including the fine arts. Though it is doubtless true, as Whitehead observed, that "a merely well-informed man is the most useless bore on God's earth,"[10] it is no less true today that the ignorant man is a menace to himself and to his fellow citizens. No person can now live fully and effectively without at least a modest knowledge of what Ortega y Gasset called "the vital system of ideas of a period."

In discussing the value of a comprehension of this system of ideas in the education of professional men Ortega says:

> Society needs good professional men—judges, doctors, engineers—and therefore the university is prepared to furnish professional training. But society needs before this, and more than this, to be assured that the capacity is developed for another kind of profession, the profession of governing. In every society someone governs, whether a group or a class, few people or many. By "governing" I mean not so much the legal exercise of authority as a diffuse pressure, or influence, exerted upon the body politic. Today, the

[10] Alfred North Whitehead, *The Aims of Education* (New York: The Macmillan Company, 1929), p. 1.

societies in Europe are governed by the bourgeois classes, whose majority is composed of professional men. It is of the first importance to these societies, therefore, that these professional people, aside from their several professions, possess the power to make their lives a vital influence, in harmony with the height of their times. Hence it is imperative to set up once more, in the university, the teaching of the culture, the system of vital ideas, which the age has attained. This is the basic function of the university. This is what the university must be, above all else.[11]

Yet it must be apparent to anyone who moves among "educated" people that some who leave our institutions of higher education today are unacquainted with the living ideas of their time. Haltingly they feel their way in darkness through many of the common avenues of life because their path is unilluminated by even the most elementary knowledge of themselves or of their world. That many who have spent four or more years in an institution of higher education are innocent of much of the reliable knowledge of their day is attested by the experiences of the author of a best-seller on the social implications of atomic energy. In a personal letter he remarked that discussions with college audiences revealed that on many matters of fundamental significance they were no better informed and hardly more curious than the man in the street.

In view of the enormous mass, and the rate of growth, of modern knowledge, no fair-minded person could expect students to encompass any large portion of it in four, or even in forty, years. Within the time available, however, they can properly be expected to gain an acquaintance with the basic facts and underlying principles of the various disciplines. A student who completes a professional education of four or more years with however distinguished a record, but with little or no knowledge of English literature, history, philosophy, or economics is not liberally educated. It is equally true that students majoring in the humanities and the social sciences cannot be considered liberally educated unless they have a basic understanding of the sciences and the professions. They will be prepared neither to think nor to act effectively in many life situations which are the common lot of all.

The acquisition of broad knowledge beyond one's field of specialization does not necessarily imply superficial learning. Whatever is studied may be studied well without any attempt to master the entire spread of the subject. No one has expressed this idea better than John Stuart Mill:

> To have a general knowledge of a subject is to know only its leading truths, but to know these not superficially but thoroughly, so as to have a true conception of the subject in its great features; leaving the minor details to those who require them for the purposes of their special pursuit. There is no incompatibil-

[11] José Ortega y Gassett, *Mission of the University* (H. L. Nostrand, trans.; Princeton, N.J.: Princeton University Press, 1944), pp. 58-59.

ity between knowing a wide range of subjects up to this point, and some one subject with the completeness required by those who make it their principal occupation. It is this combination which gives an enlightened public; a body of cultivated intellects, each taught by its attainments in its own province what real knowledge is, and knowing enough of other subjects to be able to discern who are those that know them better.[12]

Cardinal Newman in his monumental analysis of the nature and purposes of liberal education in *The Idea of a University,* observed that the mere possession of knowledge does not guarantee the efficient, the incisive, and the imaginative use of the mind. Exploring the relation between knowledge and intellectual ability, he remarked:

> Knowledge then is the indispensable condition of expansion of mind, and the instrument of attaining to it; this cannot be denied, it is ever to be insisted on; I begin with it as a first principle; however, the very truth of it carries men too far . . . the end of a Liberal Education is not mere knowledge.[13]

TO CULTIVATE INTELLECTUAL SKILLS

Second, American society needs citizens thoroughly in command of their intellectual capabilities and skilled in applying them to the complicated social problems of their time. Liberal education ought, therefore, to cultivate those skills and habits of reasoning which constitute intellectual competence, the capacity to think logically and clearly, the ability to organize one's thoughts on any subject on which essential facts are possessed or obtainable. In a sentence, these faculties might collectively be described as the capacity to bring one's full intellectual resources skillfully to bear on the solution of a problem or to order and interpret a complex set of data in the physical, social, or artistic world.

As in the case of knowledge, to gain competence in using the diverse forms of reasoning, the student must have experience with intellectual processes in addition to those conventionally employed in his major field of interest. The various disciplines do, of course, employ some intellectual processes in common—as, for example, the logical deduction of conclusions from valid premises—whether the matter under consideration involves the facts of science, history, or art. Yet they also use intellectual methodologies in part peculiar to themselves. The chemist will only be satisfied with knowledge in which the probability of error is reduced to negligible proportions, while the historian or the sociologst, dealing as he does with human acts and events, must be satisfied with a much greater range of error of both fact and judgment. The student of art, on the other

[12] John Stuart Mill, *Inaugural Address* (Boston: Little and Gay, 1867), p. 7.

[13] John Henry Newman, *The Idea of a University* (New York: Longmans, Green and Co., 1955), p. 115.

hand, enjoys even greater freedom of subjective evaluation and interpretation than either the physical or the social scientist.

There was a period in the evolution of modern scholarship, particularly in the nineteenth century when, regrettably, scholars universally attempted to use a rigid scientific methodology in the investigation of all aspects of reality, even the fine arts. This practice, incontestably a great boon to investigations of physical reality, was nevertheless a pall on the disciplines refractory to its methods. It was also responsible for the lack of genuine appreciation of literature and the arts in generations of students who were taught to pick apart and classify great literature rather than to understand and appreciate its argument and its aesthetic qualities.

The significance of this second objective—relating to intellectual method—can best be appreciated when considered apart from the first objective—relating to subject matter—by showing how the same content may be treated in diverse ways in different disciplines. An example will illustrate the varied approaches to reality made by persons whose thinking is dominated by intellectual specialization: The scientist, looking at the countryside in Oklahoma some years ago might have seen only the processes of erosion eating away irreplaceable topsoil; the artist might have observed the aesthetic relationships of form and color even in such a barren vista; the philosopher, the meaning of man's sometimes futile efforts to sustain himself in the midst of the uncontrollable forces of nature; the sociologist, the conditions of life which cause whole masses of men to take up their belongings and set out for a new habitation in fairer country; and the literary man, the human stuff out of which to create a significant work of literary art, *The Grapes of Wrath*.

The most distinctive and yet the most widely used processes of reasoning are doubtless the deductive method of formal logic and the inductive method of science. Those who are to be liberally educated can most readily gain familiarity with these mental processes, and skill in their use, by the study of mathematics and the sciences. No person can live intelligently today unless he understands the methods of reasoning with which scientists have so dramatically explored the unknown void of the universe, from the boundless oceans of cosmic space to the infinitesimal sphere of the atom's nucleus. The intellectual procedures used in the conception of a hypothesis, the arrangement of the experiment to test it, the drawing of conclusions from the facts thus established—all these skills every citizen needs if he is to reason validly and objectively about physical phenomena, or to understand the results of the work of scientists. Moreover, properly taught, these habits of thought can be broadly applied in analyses of the complex social world which surrounds all human beings. Since the sci-

ences differ in their use of these procedures in dealing with a wide variety of physical problems, leading thinkers on scientific education, such as Whitehead and Conant, believe that the broadest range of acquaintance with these subjects will result in the fullest understanding and skill in the use of their methods.

Other branches of learning— for example, the humanistic disciplines —use somewhat different intellectual operations in their interpretation of the world and the activities of men. Though they naturally employ the laws of logic in constructing a reasoned view of reality, their distinctive characteristic is their concern with values, with the ends of life, with the destiny of man. Those who teach history, literature, philosophy, and the arts cannot confine themselves to a consideration of the characteristics and behavior of exactly measurable phenomena. They must introduce the student to the reflections of creative minds on the nature of man and his world and their conclusions, usually couched in much less precise terms than those of the scientist. Their concern must be with man, not as a physico-chemical complex operating within a mechanistically determined system but rather with man as a being of purposes, values, loves, hates, ideals, and sometimes as a seer or prophet with divine inspiration. In literature the student should vicariously enjoy many of the richest experiences of life, providing insight into human motivation and behavior attainable in no other way except through personal experience. In a book like *Crime and Punishment,* a youth encounters ideas and attitudes— whether right or wrong, ideas that are relevant, controversial and important in his life—sees them in their impact on men and women, sees them followed through to success or catastrophe or to compromise. To read a serious work of fiction cannot fail to be acclimating and a maturing, if also sometimes unsettling, experience. Such experience will often bring youth further along the road to *subjective* adult stature than volumes of sociology or philosophy.

If the humanities are properly taught, the student acquires at least an elementary understanding of the distinctive habits of thought which philosophers, literary men, creative artists, and the seers of the ages have used in explaining man and the purposes of his being.

Still another area of human intellectual endeavor uses somewhat different approaches in its interpretation of reality. The social sciences—for example, economics, sociology, and political science—insofar as possible follow scientific procedure by constructing hypotheses, setting up experimental controls, and making accurate observations. These disciplines also use other investigative procedures, including statistical method, historical analysis, and case studies. Unlike the natural scientist, however, the

scholar concerned with social phenomena often cannot arrange experiments which others can repeat. He must, instead, sometimes accept data of unprovable authenticity or of incomplete representativeness and, reasoning cautiously, arrive at tentative conclusions. Much of his material does not lend itself to the exact measurement of the physical scientist. In words credited to the celebrated economist F. W. Taussig, the social scientist is concerned with the "wavering and incalculable behavior" of man.

The educated person must be skilled in these processes of tentative and precise reasoning about phenomena of inexact measurement. Most human actions must be based on evidence which, though not fully conclusive, is the best available at the time. One of the chief aims of higher education should be to cultivate habits which will prevent human beings from acting blindly with no facts, or procrastinating indefinitely because the last shred of evidence is not in.

The liberally educated mind possesses another set of intellectual skills, those of expression—the abilities involved in the effective use of the varied symbols of communication—words, numbers, and artistic media. In the formulation of concepts and in the orderly development of a reasoned view of life, the meanings of words are the building blocks; the logical relationships among these verbal expressions, the cement which holds them together. No aspect of higher education has been more severely criticized than the teaching of the skills of communication; and yet instruction in this subject is highly valued by those who realize its importance in all phases of adult life. Several years ago this statement was well documented in a study of over thirteen thousand degree-holding employees of the General Electric Company. These graduates were divided into two groups, those who had attended engineering schools and those who were graduates from nonengineering curricula. When asked to appraise the various subjects they had pursued in their undergraduate education in terms of their career value, the nonengineers placed English communication, both oral and written, at the top of the list. Engineering students placed English second on their list.[14]

Three thousand four hundred faculty members in eight types of professional schools mentioned English more frequently than any other subject offered in liberal arts colleges that should be required of all professional students. In fact, it was the only subject which almost everyone of the respondents considered indispensable.[15]

[14] *What They Think of Their Higher Education.* A Report of a Survey of the Opinions of 13,586 College Graduates, Employees of the General Electric Company (Schenectady, N.Y.: General Electric Company, January 1957).

[15] Dressel, Mayhew, and McGrath, *op. cit.*

A grasp of another means of communication, the basic concepts of number and quantity, and skill in their use, is indispensable in understanding the infinite variety of relationships of size, space, shape, and speed with which all human beings are daily concerned. Mathematics is, therefore, a form of communication in which all liberally educated persons ought to have considerable skill.

The types of communication other than those employing words and numbers— the means of expression used by the painter, the sculptor, the musician—institutions of higher education as a whole have unhappily neglected. Many of mankind's most intensely expressive, most compelling ideas and emotions have been communicated by the painted canvas, the chiseled stone, or the orchestrated melody. Liberally educated men and women should be able to comprehend and appreciate meaning communicated through these artistic media. Ideally they should also be able to experience the unique satisfaction attained by personal expression in one of them.

TO CULTIVATE TRAITS OF PERSONALITY AND CHARACTER

Third, American society needs citizens richly endowed with intellectual curiosity, aware of their moral responsibility to be tolerant, open-minded, intellectually humble, and governed at least for a time by a reasoned view of existence. For even if the college graduate is equipped with essential knowledge and the skills of intellectual workmanship, he may nevertheless have failed to reach these important goals, perhaps the *sine qua non* of liberal education. Though richly informed, and capable of clear and cogent reasoning, he may yet be intolerant, unwise, intellectually stagnant, and inept in the arts of human association. The third major objective of liberal education is, therefore, concerned with attitudes, ideals, and traits of personality and character. These qualities, harder to describe and more difficult to measure than the other outcomes of liberal education, are yet the hallmark of the cultured man and woman. As someone has said, they are the qualities that remain after all the facts the student has learned have been forgotten. John W. Gardner has perceptively described some of these traits in a report of the Carnegie Corporation:

> Most of us agree that we would wish the educated man to be marked by intellectual curiosity, the capacity to think critically and the capacity to weigh evidence dispassionately. We would wish him to be tolerant, temperate, balanced in judgment, and we would wish him to possess certain general qualities such as maturity, magnanimity, . . . we would not wish his rational processes to be at the mercy of his fears and prejudices.[10]

[10] Carnegie Corporation of New York, *Fifty-first Annual Report, 1955-56* (New York: The Corporation, 1956), p. 6.

The liberally educated person embraces certain values; he has at least a provisionally formed and examined philosophy of life, a *Weltanschauung,* a religion around which he organizes the varied purposes and activities of his existence. These values of the liberally educated man represent not only the ideas and causes for which he would live, but more importantly those for which, if necessary, he would die. They give stability to his being. They serve to keep the ship of life steady on course as it is buffeted by the unpredictable forces of man and of nature.

Knowing his own limitations, the liberally educated man has respect for the rights and views of others. He is humble, not only before the capricious and uncontrollable forces of nature, but also in the presence of his own ignorance. And most important of all, he continually seeks wisdom through the extension of his knowledge and reflection on its meanings. Realizing how much he does not know, he is driven by an unrelenting curiosity, an unquenchable thirst for deeper knowledge and fuller understanding.

Unless professional education inspires the desire to learn, to extend the scope of one's knowledge, to increase one's insights into the nature of things, it has condemned its recipients to eventual ignorance and mental stagnation. For the exponential increase of knowledge is the most arresting fact in today's world of learning, and swiftly accelerating change the most characteristic feature of modern life. Hence, even if higher education were able to supply each student with all the knowledge needed to understand the world in which he currently lives, and even if it could sharpen the intellectual skills to a fine point, it would have failed if it had not added to these achievements the inculcation of the irresistible desire to learn and to know. For as knowledge grows and the world changes, all who wish to live intelligently must continue to grow and to change through learning. Unless education initiates a chain reaction in which each advance in understanding sets off the desire for greater growth in wisdom, those who leave our campuses will soon reach a state of permanent intellectual rest. They will lose touch with the ongoing world.

These then are the three major goals for liberal education in American democratic society. They have much in common with earlier conceptions of the ends of liberal education, but they deserve reaffirmation today when in some respects they are more difficult to reach, and because they do not today dominate higher education as they should, and as they must if the Greek ideal of the intelligent, self-directing, morally responsible, free man is to be realized in this land.

Chapter 3

PROFESSIONAL EDUCATION

THE HISTORY OF PROFESSIONAL EDUCATION REVEALS CHANGES AS arresting as those in liberal education. But before they are reviewed some decisions must be reached concerning the meaning of the phrase, "a profession." This term, and the conditions of life to which it refers, have been discussed for many years. In Britain two scholars, Alexander M. Carr-Saunders and P. A. Wilson made an exhaustive analysis of many occupational groups which were generally recognized as professions, as well as a number of others aspiring to that status. Their researches led them to the conclusion that they should not attempt a definition but should, rather, "conclude that certain vocations, possessing [certain] characteristics in a greater or lesser degree, approach more or less closely to the conditions of profession."[1]

Morris L. Cogan, after a careful review of statements on the subject, concludes that "a survey of some of the literature on this topic reveals that the promulgation of a satisfactory definition has progressed but little beyond the six criteria proposed by Abraham Flexner."[2] Since these criteria will serve as a basis of judgment with respect to the eight types of educational institutions (agriculture, business administration, education, engineering, journalism, music, nursing, and pharmacy) included in these studies, they are given verbatim from Flexner's article:

> Let me now review briefly the six criteria which we have mentioned: professions involve essentially intellectual operations with large individual responsibility; they derive their raw material from science and learning; this material they work up to a practical and definite end; they possess an educationally communicable technique; they tend to self-organization; they are becoming increasingly altruistic in motivation.[3]

[1] Morris L. Cogan, "The Problem of Defining a Profession." *The Annals of the American Academy of Political and Social Science*, January 1955, p. 105.

[2] *Ibid.*, p. 106.

[3] Abraham Flexner, "Is Social Work a Profession?" *School and Society*, Vol. I, No. 26 (June 26, 1915), p. 904.

If these eight professions are appraised in terms of these six criteria it will be apparent at once that some do, but others do not, satisfy Flexner's criteria in all respects. All in varying degree "involve essentially intellectual operations with large individual responsibility," although those engaged in business and journalism, for example, may exercise their skills within a larger framework of policy established by others. All these occupations increasingly "derive their raw material from science and learning," although the amount of established fact in some fields is smaller than in others; they all apply their learning to practical ends; they all possess an educationally communicable technique; they tend to self-organization, though here again the age, the cohesiveness, and the influence of some of these professional groups would differ widely from others; and they vary considerably in their altruistic motivation. Some would argue that the practicing pharmacist and the businessman, for example, are engaged in occupations in which the profit motive is, and must be, dominant. Howard R. Bowen,[4] however, makes a strong case for business management as a profession in the sense that businessmen of top level are, and must be, concerned with the influence of their activities on the lives of a host of human beings—employees, stockholders, and patrons.

In any event, it can be said that all these eight groups are moving, some rapidly, some more slowly, toward the goals described by Flexner. They will gain status as professions in the public mind as they strive to reach these goals through (1) a selection of their members; (2) the precise statement of a code of ethical conduct; and (3) the reprobation and perhaps exclusion of members whose behavior lowers the public esteem in which the group is held. It is in connection with the clarification of the proper functions and conduct of the members of the newer professional groups and in the precise statement of the conditions of professional life that much remains to be done if they are to gain the status among laymen generally to which they aspire.

There is a more practical reason for classifying these eight types of education as professional. Rightly or wrongly it has become the practice in American higher education to refer to the divisions or curricula outside the college of liberal arts as professional schools or colleges. Though this nomenclature often implies invidious distinctions which may not actually exist, ease of communication requires that the traditional terminology be retained. The position taken here does not, however, recognize many of the differences which partisan advocates of both professional and liberal education have attempted to establish and perpetuate.

[4] Howard R. Bowen, "Business Management: A Profession?" *The Annals of the American Academy of Political and Social Science,* Vol. 297 (January 1955), pp. 112–117.

The Changing Character of Professional Education

Just as it is important to know the evolution of current conceptions of liberal education in any endeavor to revamp curricula to meet more completely the needs of modern life in this democratic society, so too a knowledge of the origin and development of professional education is essential in such efforts. The history of professional schools as integral parts of universities extends back into the Middle Ages. Indeed, professional education dominated the purposes and suffused the entire life of the first corporate institutions of higher education in Western society. Beginning in the eleventh century, centers for the study of medicine, law, and theology sprang up at Salerno, Bologna, and Paris. As new academic communities came into being throughout Western Europe, the faculties of philosophy (whose counterparts in the United States provide instruction in the liberal arts and sciences) joined those of medicine, law, and theology to form the modern university. In many foreign institutions these four original faculties have not been augmented by any of the numerous professional schools so common in this country—such as the colleges of agriculture, business administration, pharmacy, and nursing. In fact, among the educated of Western Europe these professional units and others established in such abundance in recent decades are not included among the company of learned callings.

Though the roots of professional education in this country reach deep into the intellectual traditions of Europe, the growth of our academic institutions has been considerably influenced by the atypical political, social, and economic climate of this nation. As we have seen, a direct genealogical line can be traced from liberal arts education in the English universities to Harvard. Not so the professional schools. After the founding of Harvard in 1636 more than two centuries passed before it became customary for physicians, lawyers, and clergymen to attend a university to prepare for the practice of their calling. Some schools of medicine, law, and theology did exist in the eighteenth century. But even as late as the last half of the nineteenth century the majority of the practitioners of these professions in the United States received no formal training in an institution of higher education.

Indeed the twentieth century was well begun before formal education became the accepted avenue to professional status in most fields. As late as 1900 many of the divisions of universities which now enroll hundreds of thousands of students had not been established. The rapid growth of these relatively new professional schools is revealed by a comparison of the aggregate of their graduates in 1901 and fifty years later. Of all the

first degrees granted in 1901, a total of only 4.1 per cent were in the four fields of agriculture, business, education, and engineering. By 1951-53 the corresponding percentage had risen to 46.4, or nearly half of the first degrees awarded in all fields throughout the country.

Any real understanding of professional education in this country must rest upon a review of the various stages in its institutionalization. With only minor deviations education in the various professions now represented in college and university structures has undergone a common evolutionary course. Though the earlier developments in medicine and the law may have been recapitulated in shorter terms in professions institutionally established somewhat later, the sequences in their development have been the same. Some schools—such as those in nursing, which have in recent years become integral parts of institutions of higher education—are only now entering the later stages of educational development attained by medicine a half century ago, but the pattern of evolution has generally proceeded through the same stages for all.

Five stages can be clearly identified in the growth of professional education in the United States. Since medicine was organized early into a cohesive body concerned with the training of the oncoming generations of physicians, it can serve as the prototype of this evolutionary process.

THE APPRENTICE STAGE

In the colonial period and in the first decades of the Republic the training of physicians was accomplished through an apprenticeship in which the person aspiring to become a doctor indentured himself to an established practitioner. Under this arrangement over a period of years through reading, observation, and clinical instruction at the bedside, the fledgling physician acquired the knowledge, the skills, the qualities of personality and character, which typified the members of his chosen calling. In the beginning of this relationship the tasks the novice was expected to perform were often sheer drudgery, such as cleaning vessels and instruments and even taking care of the doctor's horse. Later he was gradually permitted to assist with, and finally to take full responsibility for, the treatment of patients. The final step into full professional status came when his sponsor, and later a public body such as a state board of examiners, certified that the apprentice was prepared to accept the responsibilities of independent practice.

Though some rudimentary medical schools were established early in the history of the Republic, until late in the nineteenth century an apprenticeship was the customary training for physicians. A similar system existed in the law. The uninitiated "read the law" under the tutelage of

a member of the bench or bar. Indeed until recent years most states continued to admit persons to the practice of the law through this route, and a few still do. The same arrangement prevailed in the preparation of members of the clergy. Centuries after the establishment in Europe of schools of medicine, law, theology, and philosophy (teaching), admission to the learned callings in this country depended not on formal education, either general academic or technical, but rather on practical experience in association with established practitioners.

THE PROPRIETARY SCHOOL STAGE

The second stage in the development of professional education occurred when centers of population began to develop and the dramatic advances of learning in Europe, especially in the basic sciences, began to reach these shores. Then an increasing number of institutions of higher education were established throughout the country. In some communities physicians banded themselves together in teaching groups. After obtaining legal authorization, they organized a course of study, arranged for teaching rooms and faculties, engaged other members of the staff, admitted students, and finally determined which were worthy of a degree. Although the institutions they established held charters from the various states, they were customarily proprietary, not eleemosynary organizations. That is, as compensation for assuming administrative and teaching responsibilities, the professors levied fees on students and shared the income. Speaking of the low state of medical education under the proprietary plan, Nevins remarks:

> If agricultural education was nonexistent in 1865 and engineering education very rudimentary, medical education was a social disgrace. The proprietary colleges with which the nation was sown, chiefly joint-stock corporations which furnished the least possible tuition for the highest possible price, poured out a stream of quacks and incompetents.[5]

This was the typical medical education available in the second half of the nineteenth century. Standards of admission were often low, many students coming to their medical studies with little more than an elementary education, and the curriculum frequently covered only a year or two of a few weeks each. In one university established before 1850 the curriculum as late as 1888 extended over only two years, and the sole difference between the first and second was that seniors sat in the front of the lecture hall and freshmen in the rear. Although in some institutions this education was an improvement over the informal and unsystematic apprenticeship, the following statement of an observer near the end of

[5] Allan Nevins, *The Emergence of Modern America, 1865–1878* (New York: The Macmillan Company, 1927), pp. 276–77.

the nineteenth century reveals that medical education still had far to go to reach maturity:

> . . . the candidate for entrance upon medical study was acceptable if he could read and write his own language . . . during the medical course no time was devoted to botany, comparative anatomy, physics, or any subjects that make any part of a liberal education . . . It was possible for a young man from the shop or farm, whose education represented what he had gleaned in a few winter terms of school, and a few months as a busy practioner's office boy and coachman—with the privilege of reading in the doctor's books at odd hours—it was possible for a young man, with such a preliminary training, to attend two winter terms of 12 to 16 weeks each, hearing the same lectures and attending the same clinics the second year as the first, to receive the degree of *Doctor of Medicine* which carried with it a license to practice anywhere in the country.[6]

THE UNIVERSITY SCHOOL STAGE

The medical college, fully integrated into the life of a university, was a far cry from the proprietary school. For a number of years the two types coexisted. But in 1910 events occurred which inaugurated the first lasting efforts to improve and standardize medical education on a higher intellectual plane. In that year Flexner published his monumental report.[7] This report helped markedly in the rapid extinction of the proprietary colleges. A concurrent reforming zeal in the accrediting bodies of the medical fraternity and the inability of many institutions to offer the full complement of services essential to sound education caused many medical schools to close their doors. With few exceptions, institutions which could not gain affiliation with a college or university where the basic sciences were taught went out of existence. Soon the medical curriculum was universally extended to four years and admission requirements were raised and standardized.

Paralleling these improvements in the medical schools themselves, another significant advance occurred in medical education through the imposition of the requirement that incoming students have completed at least one year of preliminary instruction in a liberal arts college. Even in the nineteenth century a few schools required some premedical education. Moreover, even as early as the colonial period some prospective doctors of their own volition secured a liberal arts degree before studying medicine. But such persons constituted a small percentage of the doctors in this country. In 1910, however, simultaneously with the issuance of the Flex-

[6] W. S. Hall, "Medical Education in America: Its Past, Present, and Future," *Journal of the American Medical Association*, Vol. 27 (1896), pp. 1265–69.

[7] A. Flexner, *Medical Education in the United States and Canada* (New York: The Carnegie Foundation for the Advancement of Teaching, 1910).

ner report, the Association of American Medical Colleges laid down a one-year premedical requirement, including prescribed studies in the sciences.

THE PREPROFESSIONAL REQUIREMENT STAGE

The imposition of premedical requirements initiated the fourth step in the evolution of professional education.[8] This action signalized the recognition among members of the profession that a broad education in the liberal arts and sciences was essential to professional competence. In the beginning most educators justified the extension of the premedical requirements purely on grounds of professional necessity. Instruction was universally required in the natural sciences and less commonly in the social sciences and the humanities. Success in medical school and in practice were considered to be dependent on this basic education, but it was narrowly limited to subject matter which had a clear professional value. It is unnecessary to trace the gradual increase in premedical requirements from one to three or four years. It is now common for those seeking admission to medical schools to hold a degree. In the 1958 entering class, 71.1 per cent had no less than a bachelor's degree and many held graduate degrees.

THE GENERAL EDUCATION STAGE

In the fifth stage of development, a present-day phenomenon, the narrow vocational conception of the value of liberal education has been superseded by the view that premedical instruction ought to include subjects not directly related to practice. Increasingly the members of the profession have recognized that a broad general education is essential if they are to continue to enjoy their established position of preferred social status and leadership, and if the functions of the profession are to be intelligently conceived in terms of contemporary social and economic developments. Moreover, the medical fraternity is increasingly aware of the value of literature, the fine arts, philosophy, and the other humanities in enriching personal life through better self-understanding and vicarious experience. The impact of this movement toward broader educational goals, which has gained momentum in the past decade, is clearly evident in the relaxation of earlier heavy and restrictive prescriptions in the sciences and mathematics. The prevailing philosophy of medical educators is that the student should gain as broad, as liberal an education as possible

[8] For a fuller treatment of the developments in medical education during this period see another publication by a member of the staff of the Institute of Higher Education, Kevin P. Bunnell, "Liberal Education in American Medicine," *Journal of Medical Education*, Vol. 33, No. 4 (April 1958), pp. 319–40.

during the undergraduate years and leave specialization in the scientific fields until he enters medicine.[9]

The training of medical practitioners has evolved through these five stages in a period of less than seventy-five years. These developments have been described in some detail because they reveal a pattern characteristic of all other professional education that has become a part of an institution of higher education. Some professions—like dentistry and the law—have virtually paralleled the developments in medicine, though fewer students have completed such extensive preprofessional requirements as in medicine. Each of the undergraduate professional schools in this series of studies[10] has passed through at least the earlier of these five stages, and most of them are rapidly completing the full five-phase cycle. In any single profession, however, an examination of a number of institutions and a review of the education of the present practitioners reveal the whole range of five steps from an apprenticeship to the broadest liberal and professional education. Some students—as, for example, in business administration, journalism, and agriculture—even today continue to learn the esoteric knowledge and the specialized skill of a particular occupational group through an apprenticeship; some through private personal instruction or in a proprietary school, as in business or music; some in an institution which offers a curriculum of less than degree length, as in nursing or teaching; some in a school which combines professional and liberal education in a four-year curriculum, as in all eight professions represented in these studies; and some, as at the Harvard Schools of Business and of Education, in an institution which requires a bachelor's degree for admission.

The vast majority of undergraduate students prepare themselves for initial gainful employment by completing a four- or five-year formal course of study in an institution of higher education. Most of the programs they pursue are in the fourth stage of development in the sense that they involve study in general and professional education but, unlike the medical profession, these groups have chosen in the main not to separate the liberal from the professional education, which are usually offered concurrently. The more forward-looking institutions are shifting the emphasis from a narrow preoccupation with technical details and how-to-do-it skills to broad subject matter. They are stressing the analytical intellectual proc-

[9] For a comprehensive review of the philosophy and practice of premedical education see the definitive report on this subject in *Preparation for Medical Education in the Liberal Arts College* by Aura E. Severinghaus, Harry J. Carman, and W. E. Cadbury. (New York: McGraw-Hill Book Company, Inc., 1953), especially pp. 67–84.

[10] The Institute of Higher Education has in mimeographed form, and will soon issue in printed monographs, statements in each of eight professions showing the developments which parallel those in medicine.

esses required to prepare the student adequately for his professional activities, as well as for the discharge of the responsibilities of citizenship.

The history of professional education in the United States strongly suggests that the occupational groups which have most recently turned to institutions of higher education for the formal education of their future members, such as the physical therapists, actuaries, and medical technologists, could profit greatly by observing the developments in the older professions. The experience of the latter clearly shows that the social status and the general competence of their members have been enhanced by the adoption of educational programs which emphasize broad principles and a general education for the varied responsibilities of life. Contrary to a view among some members of the newer professional groups, they will not gain prestige and a separate identity by multiplying units of highly specialized, technical instruction of limited applicability. Curricula in some professional schools, composed of narrow, highly specialized and technical subject matter, could be improved by a reduction of such courses, by an increase in the liberal arts and sciences, and by offering core courses in the professional field stressing principles rather than details of fact and technique. If such a reorientation occurs, graduates will not only fulfill their professional responsibilities more effectually; they will also more fully understand and discharge their duties as citizens and they will live a richer personal life. The profession as a whole will gain the enhanced social and economic status and greater opportunity for civic leadership which have invariably accompanied the raising of educational standards.

Professional Education Today: Its Purposes

In considerable measure the contributions of liberal education to the professional student can be made by well conceived, well structured, and well taught professional courses. But the primary question understandably relates to the objectives directly concerned with technical competence. What should professional courses of study hope to accomplish in preparing the student for his vocational responsibilities? A related question frequently raised has to do with the extent to which an undergraduate professional program should attempt to prepare the student for a specific job. In business administration, for example, the question may take the form: "At graduation should the student expect to be a specialist in one branch of business enterprise, such as management, accounting, or finance?" If the answer is affirmative a further question is then often posed: "Should the student expect his undergraduate education in commerce to make him a specialist within a subdivision of one of these fields, as, for

example, personnel management?" Some carry the inquiry still further and ask whether the graduate should not be qualified as a personnel manager in the automobile or oil industry. Similar questions can and should properly be asked with respect to all the branches of business education and all other professional curricula as well.

These questions concerning the purposes of professional education cannot be answered in the abstract. They must be considered in terms of the vast bulk of modern knowledge, its rate of growth and change, the time available to the average student for preemployment training, and especially the proper purpose of initial education in a vocation. As these various factors which irresistibly shape professional education are analyzed, the dominant principle in curriculum construction is thrown into high relief. It becomes axiomatic that the student can be, and in principle should be, given only such basic specialized instruction as will qualify him for initial gainful employment. This philosophy is well expressed by Walter Mathesius, an engineer and businessman, who in speaking of the kind of preemployment education an engineer or architect should have said:

> It is my conviction that the essential objective of a higher education in engineering or architecture should certainly be not the graduation of specialists but the building of good citizens equipped with fundamental knowledge and trained in logic. Completing his college studies should not be the end, but rather the foundation for the young engineer's education for life, so that he will step out into the world able and eager to broaden his scope, or if he should desire later on to do so, to concentrate on a narrower field in which he might then become a specialist because of years of experience and not because of educational limitations.[11]

W. Earl Armstrong, a leading thinker in the field of teacher education, argues for a similar approach in the development of a teacher education program. Armstrong says that it should not be assumed that:

> . . . the preservice curriculum should attempt to provide all of the insights and skills that the teacher will need in order to be a fully competent person. Rather, the function of the preservice curriculum as here assumed is to provide the best possible preparation for the teacher to *begin* to teach. A preservice curriculum based on this assumption will of necessity leave all aspects of the teacher's education incomplete. That is to say, the general education of the teacher will need further strengthening, the area or areas of subject-matter concentration will need either further broadening or deepening, and further additions will need to be made to the professional insights and skills of the teacher.[12]

[11] Francis R. Bellamy (ed.), *The Architect at Mid-century: Conversations Across the Nation* (New York: Reinhold Publishing Corporation, 1954), p. 122.

[12] W. Earl Armstrong, "The Teacher Education Curriculum," *The Journal of Teacher Education*, Vol. 8, No. 3 (September 1957), p. 232.

The views of these two commentators could be duplicated a thousandfold in the literature of the professions.

TO PROVIDE ORIENTATION

If the several values in a professional curriculum are to be kept in proper balance, the undergraduate student cannot be prepared as an expert in any specific job. Undergraduate instruction can be expected to do no more than acquaint the student with the vocabulary and the basic principles of a broad field such as pharmacy, engineering, or nursing, and cultivate the intellectual skills by means of which new knowledge can be acquired and applied to the infinitely varying problems of day-to-day practice. The controlling idea in the development of a balanced program of professional education has been well expressed by Dean Helen Nahm of the School of Nursing at the University of California, who has said that she thinks "our major problem in a professional school such as nursing is that we must, in a period of time which seems reasonable to students and their parents, prepare both a liberally educated person and a person with competencies essential for beginning practice in a professional field."

Cogent reasons have similarly been advanced by leaders in all the professions to support the view that an undergraduate curriculum should embrace only those learning experiences necessary to orient the student broadly in his chosen occupation without aiming to cultivate a high degree of competence in any of its specialized branches.

The validity of this theory of curriculum making can be illustrated pointedly from the fields of business administration and engineering. Consider such a specialized field as insurance, marketing, or finance. Any attempt to cover the entire range of subject matter in this business subject, even if desirable, would be abortive. Even if no instruction other than business were included, except for elementary English and mathematics—that is, if the general education of the student were virtually disregarded and the essential core of instruction in the basic fields of business administration were reduced to the absolute minimum—the four-year curriculum in business administration would still be inadequate to cover all the specialized branches in such a field as insurance, marketing, or finance. The store of detailed knowledge in these fields is enormous, and it expands prodigiously.

The accelerating growth of fact and theory, the invariable characteristic of every intellectual realm, explains why no one can become or remain a genuine expert in a specialized branch of learning except by long years of study and by continued acquaintance with evolving fact, principle, technique, and practice. It is for this reason that even those who graduate from a school of business administration with distinction and with the

beginning of a specialization in insurance, management, or retailing are nevertheless given positions relatively low in the organizational structure. Students who believe that intense specialization is the vehicle for rapid elevation to preferred vocational status ought to be made aware of these stubborn facts of academic and professional life. They ought in all honesty to be advised that little can be gained even in the short run by pursuing a narrow curriculum and that in the long run they lose considerably in that adaptability required to move easily from one phase of a business enterprise to another, usually the best guarantee of advancement to positions of greater responsibility.

TO PROVIDE VOCATIONAL FLEXIBILITY

Secondly, highly specialized undergraduate instruction fails to reach its reputed goal because each commercial or industrial organization has its own peculiar structure, policies, and practices. Consequently, principles of finance, accounting, and retailing must be adapted to the special circumstances and needs of an individual enterprise. The beginner who takes up his duties in any profession prepared to apply a specific body of detailed facts or procedures to new sets of circumstances will find his bag of tricks hopelessly inadequate. He will only then belatedly realize that in concentrating excessively on a narrow specialty he has failed to gain the flexibility of mind and personality required to understand and to deal effectively with a host of matters for which his limited education has regrettably not prepared him. Inevitably he will lack breadth of general and professional knowledge and the intellectual skills essential to their profitable use in the varied patterns of professional exigencies.

Even in a relatively clearly defined field like accounting such shifts require large capacity for adaptation. In public accounting the professional must be accustomed to work in a number of different types of commercial enterprises. Increasingly he acts in the capacity of counsellor on all the varied activities of a business organization from management to production to taxation. A narrow technical education cannot possibly prepare him for these varied demands on his professional knowledge and abilities.

It is sometimes argued that though all this may be true, the graduate who is able to step directly from his formal schooling into a specialized assignment even at a comparatively low level will have a real advantage over his classmates whose program of studies has been less sharply focused. Initially this may be true, but many successful practitioners hold the opinion that over the years the person with a wider knowledge and a thorough grounding in principles will have an advantage over one who has mastered a set of how-to-do-it techniques, or even a vast body of facts in a limited specialty.

But if the undergraduate curriculum is to be more generalized than specialized, how and when is the prospective practitioner to acquire the special competencies which characterize all aspects of our national life from baseball to scientific research? Theoretical and practical considerations require that these special abilities be acquired largely after the baccalaureate degree has been earned. In fact, specialized study in the advanced years of education can only be effective when it is supported by a broad foundation of general knowledge and abilities laid down in the undergraduate years. There are three general ways in which expertness in a limited field can be acquired after the completion of basic undergraduate instruction: (1) by continuing self-study; (2) by formal postgraduate education; and (3) by on-the-job training.

Self-study. It might reasonably be hoped that for many earlier education would have cultivated an abiding intellectual curiosity and a commitment to the ideal of self-enlargement. Graduates could fairly be expected to extend their knowledge after graduation by independent study; by keeping abreast of developments reported in the scholarly literature; and by attending the meetings of appropriate learned societies. In the words of a committee at Massachusetts Institute of Technology, "The school must make perfectly clear to the students that they do not go out wise and experienced executives; they go out to begin at the beginning in industry, where they will continue their education."[13] Through these more or less informal adult activities they ought continuously to inform themselves of the findings of research and the innovative techniques in their particular line.

Postgraduate education. For many, however, advanced formal training will be essential, even for those who have acquired the habit of intellectual self-development. Postgraduate education and refresher courses in institutions of higher education, and somewhat more casual instruction provided by professional and industrial organizations, afford almost limitless opportunities for continuing education. Universities now offer graduate work in virtually every specialized subdivision of knowledge. Graduates of professional schools who wish to extend and enrich their knowledge in agronomy, insurance, pharmacology, orchestration, advertising, electronics, foreign-language teaching, hospital supervision, military science, and a host of other fields will find graduate work readily available to suit their particular needs and ambitions.

On-the-job training. Even those whose capacity for independent intellectual development is limited, or who are unwilling to pursue formal

[13] Report of the Committee to Consider the Place of the Social Sciences in the School of Industrial Management (Cambridge: Massachusetts Institute of Technology, June 1952).

instruction, can enhance their expertness in a special field through their daily work. Within their own structures many organizations in business, engineering, pharmacy, and other fields provide specialized training that in variety and quality rivals the offerings of institutions of higher education. This instruction, more formal, organized, and systematic than the learning which occurs in the casual day-to-day activities of a practitioner, keeps the enterprising person intellectually alive and conversant with the expanding knowledge in his specialty. The wide range of opportunities now available for specialized education after graduation makes it unnecessary and, indeed, undesirable for undergraduates to sacrifice their basic professional and general education on the altar of premature specialization.

TO PROVIDE BASIC PRINCIPLES

A third guiding principle in the making of a professional curriculum is related to the technical courses themselves. Those who have considered the matter most critically are convinced that *even professional instruction* should stress broad principles, key ideas, and overarching generalizations rather than detailed facts or techniques. Here it is profitable to raise questions concerning what kind of education is of most worth and how much can be accomplished within the time available. The curricula of forward-looking engineering schools provide convincing illustrations of successful efforts to place greater emphasis on principles than on techniques, thus making possible the enlargement of the general education component and a broader orientation in professional subject matter.

An examination of the catalogues of representative institutions even as late as the 1930s reveals much technical instruction in such subjects as forging and machine shop practice. Now virtually all shop work and other practical courses have been eliminated. Even in theoretical subjects many engineering schools have adopted a professional core program as the common basis of the engineering specialties, such as civil, chemical, electrical, and mechanical. The enlargement of these common elements has been possible through the dropping of specialized instruction which in earlier years preempted a considerable portion of the student's time. This shift in emphasis has increased the student's knowledge of theoretical engineering and the basic sciences, as well as his general education, thus enhancing both his occupational and civic competence. Many undergraduate curricula could profitably be reexamined to the end of reducing subject matter unessential in gaining a grasp of basic principles, and eliminating instruction in techniques and procedures below the dignity of an institution of higher education.

TO CULTIVATE PROFESSIONAL ATTITUDES AND MOTIVATION

A fourth principle in designing a professional course of study relates to the cultivation of attitudes and motivations which are not the sole concern of any subject-matter field but, rather, the responsibility of all. These proposals for the reconstruction of professional curricula will succeed or fail largely to the extent that students are helped to recognize undergraduate education as only the beginning rather than the end of a long process of personal growth. Unless the experiences of the college years are viewed in this light the student is likely to misconceive the aims of higher education as a whole. Not uncommonly faculty members and curriculum makers encourage students' misconceptions of the purposes and the potential of their initial higher education. A subconscious feeling that the student must "learn it now or never" is the origin of the common compulsion to include every last bit of information, to explore every remote corner of the subject, in a single course. Under the influence of this point of view all curricula have become swollen with masses of dispensable facts and the atmosphere of the classroom has become one of hurried coverage of material rather than of reflective analysis and ordered intellectual development.

The need to reverse this process has recently been convincingly argued in committee reports of the National Science Foundation and the National Academy of Science. A. B. Arons of Amherst College, commenting on some of the recommendations of these bodies, expresses a point of view which could profitably be applied in a reassessment of all undergraduate courses:

> The first, soundest, and virtually unanimously repeated recommendation is that natural science curricula must give up the debilitating fetish of subject matter coverage. It is no longer educationally sound to try to cover the entire spectrum. We must make judicious selection of subject matter. The selection must be neither haphazard nor eclectic. It must be addressed to the clearly articulated goal of allowing a logical, coherent, and clearly motivated development of the conceptual structure of the discipline. It must reveal the evidence on which conceptual schemes are based, the connections between such schemes, and the questions which are not answered, the results which are *not* achieved. It must generate an adequate vocabulary and leave the student with the capacity to traverse himself, when the need is encountered, those compartments of subject matter which can no longer be included in the formal course.[14]

A psychology of teaching which requires the transmission from instructor to student of great quantities of detailed fact militates against two

[14] A. B. Arons, "What Should Be the Shape of Things to Come in the Natural Sciences Curriculum?" *Current Issues in Higher Education, 1959* (Washington, D.C.: Association for Higher Education, 1959).

of the salient aims of higher education—the cultivation of intellectual curiosity and the habit of assuming responsibility for one's own intellectual enlargement. Learning should advance at a pace and under conditions which make independent intellectual effort not only possible but unavoidable; which unmistakably cultivate the skills of locating reliable sources of knowledge; and which invariably arouse an unquenchable desire to grow in mind and spirit. These outcomes of higher education, the *sine qua non* of all other educational success, are impossible of attainment when the primary purpose of teaching is the purveying of information.

The basic objectives of technical instruction directly related to professional practice, and at least two of the principal purposes of a liberal education, can be achieved in a properly designed professional curriculum. Of the three major purposes of liberal education the one objective that is *not* fully attainable in a curriculum devoted to the specialized subject matter and skills of a profession is concerned with providing essential knowledge. Even here, however, a contribution can and should be made in at least one area of the large divisions of knowledge. Each professional course of study is oriented toward one of the major branches of learning—engineering, for example, toward the physical sciences; pharmacy toward the biological sciences; music toward the humanities; and business administration toward the social sciences. In the one major field related to his vocational choice the general education of the student is likely to be ample because a large range of instruction is required as a basis for later technical courses. Caution must be observed, of course, if these subjects are not to take on a vocational rather than a liberal coloration.

In any event, those branches of learning *not* closely related to his future occupation will probably be inadequately represented in the professional program unless deliberate effort is made to establish them in their proper places. It would be unfortunate, and yet it is conceivable that an engineer could be educated to be completely competent in the technical aspects of his occupation without acquiring any knowledge of languages, literature, philosophy, the fine arts, or any of the social sciences. With the exception of English and the basic sciences, a few reputable engineering schools even now offer little instruction outside the field of engineering proper. But there are masses of fact and theory, and unique intellectual methodologies, in disciplines unrelated to the practice of engineering indispensable to an understanding of the complex world in which the engineer must work and pass his personal life. Unlike such general qualities of mind and character as logical reasoning, intellectual curiosity, and tolerance, which can be cultivated in any discipline, there are facts and theories in history, philosophy, political science, and a host of other sub-

jects which the student will not encounter either by the study of engineering or its supporting sciences.

If, therefore, the engineering student is to acquire a breadth of knowledge in all three of the major disciplines, the specialized technical courses and the basic instruction in science must be supplemented to the fullest possible extent with instruction in the two other principal branches of knowledge, the humanities and the social sciences. Likewise, the student in a school of music must gain an understanding of the general ideas, the theories, and the developments in the social and natural sciences; the journalism student, in the natural sciences and the humanities; the student of agriculture, in the humanities and the social sciences, and so on through the whole procession of undergraduate schools. These proposals to round out the education of undergraduates apply with equal validity to the majors in liberal arts colleges, for their programs are, unless protected by general education requirements, no less narrow and specialized than those of students in professional schools.

These suggestions are not unrealistic. Such requirements could be imposed without placing an undue burden on students and without truncating their professional education. They are feasible, however, only if certain other conditions prevail.

One of these is related to the types of instruction available to professional students through the liberal arts colleges. Instruction outside the field of major interest must be *general* rather than *preparatory* to a long sequence of courses in one of the liberal arts disciplines. The engineering student, for example, can be introduced to the social science disciplines through a general course of eight hours' credit which stresses the key ideas, the principal problems, and the characteristic techniques of inquiry in the constituent fields—for example, political science, sociology, psychology, and economics. A similar general course in the humanities should bring him into touch with the thoughts of representative literary figures and philosophers, give him an understanding of the human problems which are the subjects of their thought, develop canons of literary taste, and create an abiding interest in reflective analysis and synthesis. Instruction in the other member of the triad of major disciplines, the natural sciences, would be provided in the subjects considered basic to engineering, namely, physics, chemistry, and mathematics.

The student in business administration, on the other hand, gains breadth in the social sciences through a study of the place of the business enterprise in modern culture, as illuminated by economics, sociology, and political science. These students in business, however, require general courses embracing the subject matter of the natural sciences and the hu-

manities. Students in pharmacy and nursing, who gain a knowledge of the physical and the biological sciences through systematic courses in these subjects as part of the instruction basic to professional study would on the other hand need general courses in the social sciences and the humanities.

So in every undergraduate field breadth of learning would be achieved in part through courses which form an integral part of professional preparation and in part through general courses inclusive of the constituent elements in the other two major disciplines. Ideally the general courses in the humanities and the social sciences—for example, for pharmacy or engineering students—would be followed later by an advanced general course in each discipline. For other students—those in music, journalism, and education, for example—second courses would be available in the natural sciences. These advanced courses, which could be elective within prescribed areas of knowledge, would give the student deeper insight into the processes of intellectual workmanship peculiar to each field and extend his knowledge sufficiently to give him a feeling of confidence in his own further self-education. These second general education courses, like earlier similar instruction, would not be the type of instruction chosen by majors in the branches of knowledge they represent, because they would be designed to serve the interests particularly of students concentrating in other departments. Harvard College has designed a variety of such courses of an advanced level which students must pursue to satisfy the requirements in general education.

The aggregate hours involved in such a program outside the major field (including instruction in English, foreign language, and physical education which customarily are common elements in all curricula) should not exceed forty or forty-four. In some instances the total could be lower depending on the student's previous education and the structure of a particular curriculum.

In some professional schools this design for a curriculum would require a reduction in the time presently available for specialized instruction. There is no suitable alternative to a decrease in technical subject matter except an extension of the period of study by an academic year or more. Such a step may in time be inescapable, as the members of the pharmacy fraternity have already concluded. Before reaching a decision to increase the length of a degree program, however, professional groups would be well advised to reexamine, as indeed many are doing, the purposes, the scope, and the contents of existing curricula. Only thus can they be assured that all the specialized instruction now required is essential, and that in fact the enormous multiplication of special courses in recent years has not weakened rather than strengthened undergraduate professional study.

The proposals made here with regard to shifting the emphasis from the specialized to the general in professional curricula have already been adopted in some of the more adventuresome institutions as, for example, the Massachusetts and the Carnegie Institutes of Technology, in engineering; Northwestern and Notre Dame Universities, in business; the University of Connecticut, in pharmacy; and many others. Such new curricular designs deserve the widest possible study. The meaning of these innovations can be most readily apprehended by dividing a professional curriculum—engineering, for example—into three parts and then observing the relative position which each has occupied in the total program during different historical periods. These three parts would be (1) general studies not directly related to the activities of an engineer, that is, elementary English and American history; (2) instruction in the basic sciences directly related to the profession, such as physics; and (3) the specialized and technical subject matter of the profession as, for example, statics or strength of materials.

Still using engineering as an example, certain trends can then be discerned in the past thirty years. Until a few years ago instruction in engineering schools was customarily divided into specialized programs leading to such degrees as Bachelor of Science in Electrical, Chemical, Civil, or Mechanical Engineering, each of which had an integrity of its own and, with the exception of English, mathematics and the basic sciences, differed materially from the others. Category 1 above—that is, general studies—constituted only a fraction of the total curriculum; usually English composition, and sometimes a course in a foreign language or economics, were the only nonprofessional subjects required or permitted. In group 2, the basic theoretical courses—physics, chemistry, and mathematics—were common to all, but in varying amounts. The bulk of each curriculum consisted of courses directly related to a particular engineering specialty, that is, to group 3.

In many engineering schools, especially those of wide reputation such as the Massachusetts, Carnegie, and California Institutes of Technology, the proportions of the curriculum in each of these three categories of instruction have been radically altered in the past quarter century. In some —Massachusetts Institute of Technology, for example—instruction in category 1 (including the humanities and social sciences) now accounts for about two-fifths of the entire four-year program. There has also been a significant change in category 2—the supporting disciplines. In recognition of the fact that even in the field of engineering proper competence today depends more on a knowledge of the basic sciences and of broad

principles of engineering than on a large body of detailed knowledge and how-to-do-it techniques the core of general courses in the professional field has also been expanded. Hence, in some institutions the first two years of all engineering programs are now virtually alike, combining a considerable element of general education with a common core of engineering science. Some institutions are also attempting to increase the standard content of the third year.

This expansion in *general* and *core* studies has necessarily resulted in a decrease in the subject matter in the third group—that is, the specialized knowledge of the various branches of engineering. What remains in this third category is merely the instruction necessary to introduce the student to his field of specialty; to provide him with a limited amount of basic knowledge needed to extend his own education; and to make it possible for him upon graduation to enter immediate gainful employment. This type of curriculum poses a striking contrast to the narrow, highly vocationalized program of only a few years ago. Though it is admittedly not typical of engineering schools, the majority seem to be moving in this direction.

Similar developments are occurring in the other professions. In pharmacy, for example, until 1925 the course of study covered only two academic years beyond high school and included little or no subject matter other than professional courses and their supporting disciplines. In that year the American Association of Colleges of Pharmacy adopted a three-year program, which in 1932 was extended to four. With the addition of instruction in liberal arts subjects and in the pharmaceutical sciences, all pharmacy schools will by 1960 operate on a five-year basis. One of the principal justifications for this extension of pharmacy education was clearly set forth by Dean Harold Hewitt in his presidential address to the American Association of Colleges of Pharmacy in 1957:

> We must seek to develop a broader education in ideas and ideals of our civilization, thus allowing our graduates to assume greater responsibilities of citizenship. We must develop a generation of pharmacists who can not only earn a living, but who know how to live.[18]

Striking changes of a similar type are either occurring, or are under consideration, in a host of schools of business administration and of nursing. The evidence is conclusive that these trends toward a broader education in all professions will accelerate in the years immediately ahead. The resul will indubitably strengthen professional education by making it more responsive to the changing patterns of contemporary life.

[18] Harold G. Hewitt, "Pharmacy Unlimited," *American Journal of Pharmaceutical Education*, Vol. 21 (Summer 1957), p. 199.

What Can Professional Education Contribute to Liberal Education?

Earlier the major goals of liberal education were described as the acquisition of a body of knowledge, the effective use of intellectual skills, and the cultivation of the attitudes and traits of personality of the cultured man. If a professional curriculum is properly organized and teaching has the proper aims, these qualities can be achieved to a considerable extent through professional studies. No one has better described the possibility of achieving some of the ends of liberal education through the study of specialized subjects than the president of the State University of Iowa, Virgil M. Hancher, who at a meeting of the Association of Land-Grant Colleges and Universities in 1953 said:

> We forget that it is possible to become liberally educated by the teaching and study of professional or specialized subjects in a liberal manner . . .
>
> While in general I would support the proposition that there are some things which every liberally educated man should know, I fear that we have been led into error sometimes by believing that the study of certain subject matter inevitably results in a liberal education. This is a doubtful proposition. It is nearer to the truth to say that there is no subject matter, worthy of a place in the curriculum of a modern Land-Grant College or state university, which cannot be taught either as a professional specialty or as a liberal subject.[18]

This statement by implication suggests that the failure of some college instruction to achieve the laudable goals of liberal education arises not from the fact that philosophy, history, and literature are no longer central in higher education but rather that the treatment of most subjects, including these three, has radically changed. In terms of their values and their practice of a reasoned life based on a set of relatively consistent convictions, students who specialize in these fields vary little from their associates studying physics, chemistry, and biology. By and large, the so-called humane disciplines, like their sister subjects, no less than those in professional schools, have become fragmented, narrowly specialized, and professionalized in conformity with the research preoccupations of teachers.

The ethos of academic life during the past quarter century or more has been such as to establish in students' thinking little relationship between their studies and the major problems of human life about which they and their contemporaries are seriously concerned. Under the best circumstances graduates carry away from the campus a considerable body of use-

[18] Virgil M. Hancher, "Liberal Education in Professional Curricula," American Association of Land-Grant Colleges and State Universities, *Proceedings* of the Sixty-seventh Annual Convention, Columbus, Ohio, November 10-12, 1953 (Washington, D.C.: The Association, 1953), pp. 45–51.

ful knowledge in one or two academic fields and a scattering of facts in a few others. But prevailing teaching aims and practices make purely accidental the cultivation of such qualities as intellectual curiosity, open-mindedness toward new ideas and points-of-view, respect for the dignity of the individual or a systematically considered philosophy of life. Many college instructors would, to be sure, affirm these as proper purposes of higher education and would hope that somehow or other by the time of graduation students would have acquired these traits of mind and heart. Few, however, would assume personal responsibility for their inculcation in courses which they themselves offer. Yet most genuinely educated persons acknowledge these traits to be the indispensable outcomes of a higher education which pretends to be anything more than perfunctory training. If some of the major outcomes of liberal education, hitherto considered to be solely the province of the instruction offered in liberal arts colleges, are to be realized, professional courses of study must assume responsibility for their achievement.

Instruction in professional schools can make a large contribution to the achievement of two of the major goals of liberal education described earlier and it can assist materially in the accomplishment of the third. The skills of logical reasoning and an orderly attack on an intellectual problem, for example, are ends of a liberal education which can be achieved through the study of professional subjects. As E. William Doty, leading musical educator and dean of the College of Fine Arts at the University of Texas observes:

> We are fortunate that in our contemporary society there are so many schools serving different and useful functions. Nearly everyone will agree that these many schools exist to teach something. In higher education there is practically complete agreement on the fact that that something is the power to think. Up to this point we can agree with our academic colleagues. We part company with them when they assert that a given package, such as that represented by the Harvard Report, or the forty-eight rule, or a requirement that all freshmen and sophomore courses must be taken only from the liberal arts core, that any one of these formulas is the only way a man can acquire the power to think and to grow as an intelligent citizen.[17]

Good teaching in courses related to a profession seeks to cultivate these traits no less than instruction in physics, psychology, or history. Whether these skills will in fact eventuate from any particular educational experience depends on the purposes and methods of the instructor and the motivation of the student, not on the peculiar, intrinsic, and unvarying worth of a particular subject matter.

If the teacher considers his primary responsibility to be that of im-

[17] E. William Doty, "A Pattern for Producing an Educated Man," *Bulletin of the National Association of Schools of Music*, Vol. 41 (January 1956), p. 19.

parting a body of factual material with little attention to the cultivation of the processes of logical and imaginative thinking, then it will be vain to expect the student to acquire these intellectual skills so useful in the wider context of life. The compulsion to "cover" subject matter is largely responsible for the failure of much higher education to nurture the critical and creative faculties which constitute the essence of a liberally educated mind. Only as the intellectual processes collectively known as the capacity to reason become a conscious end of instruction, and only as this purpose is reflected in the selection and arrangement of subject matter and in the teaching methods employed, will this crucial objective of higher education be reached. When these proper conditions of the instructional process exist the result will be intellectual enlargement whether the subject of instruction be philosophy or pharmacognosy, history or histology, mathematics or musicology.

The third major purpose of liberal education—attitudes, personality traits, and the excogitation of a philosophy of life—can also under proper circumstances be reached as readily through the study of professional as liberal arts disciplines. The validity of this statement is scarcely contestable today when the subjects offered in liberal arts colleges are hardly more concerned with the nonfactual outcomes of learning than are those in the professional schools. Except for the overwhelming weight of his findings Philip Jacob's report on the impact of general education on the values of college students should be surprising to no one familiar with the theory and practice of higher education in the United States.[18]

There was a time before the academic fraternity became preoccupied with the creation and transmission of knowledge, when the study of philosophy, literature, and history—the heart of the college curriculum—brought the student face to face with the human problems and questions which through the ages have engaged the minds of thoughtful men. Values, the basic convictions which serve as the springs of human action and the measure of human worth, were then a primary consideration in higher education. Fifty years ago a liberal arts college could still pridefully reaffirm the founders' purpose as follows: "in the best education the matter of first importance is character; second, culture; third, knowledge."[19] In some cases, particularly institutions with a clear religious purpose, colleges are still concerned with the development of character, but the percentage of courses where such experiences are an explicit aim of teaching is disturbingly small.

[18] Philip E. Jacob, *Changing Values in College* (New York: Harper and Brothers, 1957).

[19] Macalester College, *Catalogue, 1905–1906*, p. 5.

If qualities of mind and character, other than those related to the acquisition of knowledge, are of such transcending importance, as they are, faculty members in professional schools will want to assume responsibility for the attainment of these goals through their own instruction. The acceptance of this responsibility should not involve the addition of courses or faculty members trained in the special skills of cultivating intellectual curiosity, tolerance, or philosophical interests. This is a common, but often expensive and ineffective solution for new educational problems. Instead of adding new courses, in this case a large-scale reduction in the present offerings might do more good by turning the attention of teachers to matters which a considerable percentage of the profession cannot now see because of the specialized subject-matter blinders they habitually wear.

It is doubtful whether a direct effort to gain these ends can be anything but superficial, perfunctory, and unsuccessful. Their achievement can be accomplished more readily through a searching reappraisal of the objectives of instruction, a review of teaching procedures, and a reemphasis on stimulating relationships between teacher and student. In these considerations it would be rewarding to recognize that the activities of all members of the academic community ought to, and in truth either affirmatively or negatively do, influence intellectual and personal ideals. In some respects faculty members in professional schools have an advantage over their colleagues in liberal arts colleges in the cultivation of standards of thought and of character, for students are strongly motivated toward acceptance by a group with whose established codes of personal and professional conduct they wish to identify themselves.

Chapter 4

THE JOINING OF LIBERAL AND PROFESSIONAL EDUCATION

EVEN IF ALL INSTITUTIONS ACCEPT THE DUAL FUNCTIONS OF PROFESSIONAL education and increase the proportion of the total curriculum devoted to general education, a basic question remains to be answered concerning the way in which these two types of subject matter are to be organized in a unified curriculum. A decision must be reached as to whether the purposes of general and specialized education are more likely to be accomplished under a plan in which both proceed concurrently or under one in which general education is concluded before technical education is begun. Under the former arrangement some traditional liberal arts subjects, such as English, mathematics, economics, and chemistry are studied simultaneously with pharmacology or harmony or statics or newswriting or agronomy. In the latter they proceed in tandem.

There are some advantages in the arrangement in which the nonprofessional subjects are completed before the student begins professional study. First, the student can give his undivided attention to the study of English, mathematics, history, foreign language, and any of the other disciplines commonly found in the liberal arts colleges and required in varying amounts for admission to a professional curriculum. When the two types of instruction are pursued concurrently those courses which appear closer to the activities of the profession often receive an undue proportion of the student's time and energy. Sometimes too the teachers of the latter are unreasonable in their demands and make assignments which prevent students from giving adequate time to their other studies. No such conflict of interest occurs when the student is enrolled in a general or liberal arts college as, for example, at Michigan State University.

Second, the "late choosers," those who are not sure of their occupational preferences when they leave high school, have an opportunity under the tandem arrangement of the curriculum to explore various subject-matter fields basic to the several professional curricula. They also have an

opportunity to obtain more comprehensive information about the character of a professional curriculum from their fellow students and from advisers in the several schools of a university they attend. They can under this plan delay their vocational decision for several years. While spending two or more years in preprofessional courses students also mature emotionally, intellectually, and philosophically. The health professions consider this development an essential element in the preparation for the practice of callings concerned with life and death decisions.

Third, there are persuasive administrative advantages in the separation of the two types of education. When preprofessional is separated from professional, arrangements for students in a school of commerce or pharmacy to take instruction in a liberal arts college are obviated. Moreover, the latter are intermixed with other students pursuing different vocational objectives. Frequently in the concurrent curricular arrangement students in nursing, music, or engineering receive instruction in English, mathematics, physics, and other preprofessional subjects as a separate group, a practice which can lead to narrowing restrictions on the content and methods of instruction.

Fourth, for some students the tandem arrangement is a convenience and often a necessity. The growth of the junior and community colleges in recent decades has been phenomenal. They are the fastest growing units in our system of higher education. These institutions have offered educational opportunity near home to thousands who could otherwise not have had it. Any arrangement, therefore, which permits students to complete two years of posthigh school education in their own communities has some merit over one which requires them to incur the additional expense of living away from home. An incidental advantage to society at large is the decentralization of higher education from large universities into smaller units which, especially in the case of the larger state universities, is a matter deserving serious consideration if some of the intangible values of higher education are to be preserved.

These advantages of the plan in which professional education rests upon a completed program of general education will doubtless persuade many institutions and professional groups that they should adopt it.

Patterns of Organization

The alternative arrangement in which professional and general studies proceed concurrently throughout the period of higher education, though as indicated is in some ways less desirable, has compelling merits. Under this plan the proportion of the two types of instruction are varied from

year to year. In one pattern common today nonprofessional subject matter is offered primarily in the earlier, and specialized professional principally in the later years. Thus a freshman might take 75 per cent general and 25 per cent professional subjects. In the senior year these proportions would be reversed, a tapering off occurring in general education during the intervening period.

The most obvious advantage in the integrated arrangement is that it capitalizes on vocational motivation. Students who have made up their minds that they want to become pharmacists, or journalists, or musicians, are usually eager to begin the study of subjects related to their future work. They often resent the requirement that they spend from two to four years in a liberal arts college studying courses many of which, perhaps wrongly, appear to have little relationship to their main interests.

Speaking of the value of utilizing this vocational drive, Howard Mumford Jones says:

> It is wonderful how, when the individual establishes such a goal, education comes into focus. The postponement of the necessity for such a decision by two years has left the student wandering aimlessly through freshman and sophomore courses unrelated to each other and meaningless to him, since his understandable attitude is that they are patiently to be endured until he is permitted to begin his real education. But if from the beginning of his college work—indeed, if possible, before beginning that work—the student is faced with the necessity of making an adult choice of occupation, it soon becomes possible for the college to deal with him as an adult. His professional or vocational training will not then be crowded into the last two years of a four-year curriculum, and his "liberal" education will not be administered in the vast and shoreless void of two years of drift; on the contrary, the two can be administered together, the practical necessities of the one will focus the theoretical implications of the other, and the deeper the student plunges into his professional or vocational work, the more clearly he will see the necessity of a governing philosophy.[1]

In a combined program motivation is further increased by the student's feeling a certain professional *esprit de corps* from the very day he enters upon his college education. Even in freshman courses in pharmacy, engineering, or journalism, he begins to consider himself to all intents and purposes a member of the guild. He feels an emotional and intellectual identification with the other members of his class, with the members of the faculty, and with his future associates in practice. This awareness spurs him to greater effort with his studies, even those not directly related to practice. In concrete terms this means that the student who may have had little interest in English or psychology as part of a separate educational program, might take an entirely different attitude toward these subjects if

[1] Howard Mumford Jones, *Education and World Tragedy* (Cambridge: Harvard University Press, 1946), p. 95.

he considered them as integral elements in a professional curriculum.

The unified curriculum has the further advantage of placing the initial selection of future members of the craft in the hands of those who at any time represent the profession. To some extent even under a plan involving preliminary studies in the liberal arts college this power could be retained by the profession through admission requirements specifying certain courses and a minimum level of accomplishment. But there is no way of knowing what the performance might have been of students previously eliminated by the admission standards, grading practices, and faculty attitudes in liberal arts colleges. Certain qualities considered desirable by members of the profession could conceivably be deprecated or completely overlooked by other teachers. Some students, if they came early into direct contact with their presumptive future associates, might have entirely different points of view toward their studies and eventually might become able practitioners. But under the plan which horizontally separates the two curricula, members of the profession have no opportunity to consider such candidates. Those who select student applicants for membership determine, in large measure, the future character of the group. It is important, therefore, that responsible members of the professions come into contact with aspirants to membership at the earliest possible moment in order not only to pick the most promising, but also to influence the formation of the attitudes and habits of those selected.

This point was forcefully made by the late Dr. Alan Gregg, Director of the Medical Sciences for the Rockefeller Foundation: "By so much as a professional school requires preparatory courses it relinquishes to other schools a very important privilege and responsibility—the first screening or selection of its students. Whomever the colleges reject cannot even be considered by the medical schools. But more than this the professional school in making a long list of prerequisite courses says, in effect, to its future students, 'The younger you are when you decide to become one of us, the more likely you are to be admitted.' "

In the organization of the curriculum there is another advantage in providing for the simultaneous study of both specialized and general courses. Modern psychology has shown that the meaning of any experience is determined not only by the situation from which it arises, but also by the background, the attitudes, and the immediate interests of the person having the experience. To some degree we see what we are looking for. These individual differences in interests and motivation give rise to meanings and relationships varying considerably from those of other persons receiving identical stimulation.

Moreover, it is an established psychological principle that meaningful

facts are learned more quickly and retained longer than items which the psychologist calls "nonsense material." The latter, composed mostly of sensory data unrelated to the person's previous experience, is incapable of arousing significant associations. The less meaning a student sees in new subject matter, the more he inclines to learn it by rote memory. The learning process becomes mechanical, and the passage of time soon shrinks the residuum of acquired fact and theory.

The implication of these psychological facts is that a curriculum which interrelates general and professional studies rests on firmer pedagogical ground than one in which they are divorced. One caution requires serious consideration. It could be assumed that the findings of modern psychology argue for special courses in each professional field, as, for example, chemistry for nurses, economics for business students, and English for engineers. Some years ago one school of thought, assuming no transfer of training, advocated a course in inorganic chemistry for premedics, another for the future pharmacist, still another for majors in nonscientific fields, and so on *ad infinitum*. This educational philosophy caused needless specialization and fragmentation of basic courses in the various subject matter fields, some of which still persist. More recent research on transfer of training shows that when teaching consciously aims at the generalization of experience much transfer actually occurs. It is now common doctrine, therefore, that students should be instructed in the fundamental principles of a subject with such application of these principles to their own fields as may be desirable for purposes of illustration. If this method of teaching is employed, they should acquire a meaningful, not a fragmentary or superficial, knowledge, which they can apply in a variety of life situations.

The advantage of the concurrent arrangement of the professional curriculum was well summed up by the President's Commission on Higher Education which in 1947 said:

> Liberal education can be thoroughly useful when its relevance to life is brought sharply into focus by a vocational purpose that gives point and direction to the student's program. The danger of futility lies in an unfocused, aimless study of liberal subjects. For this reason the traditional segregation of liberal education in one period of a person's college career and of professional education in another has not served the best interests of either.
>
> The aim should be to integrate liberal and vocational education, letting them proceed simultaneously though in varying proportions throughout the student's college life, each enriching and giving meaning to the other.[2]

That these views are endorsed by a substantial proportion of faculty mem-

[2] *Higher Education for American Democracy*. A Report of the President's Commission on Higher Education, Vol. I (Washington, D.C.: The Government Printing Office, 1947), p. 74.

bers is evident in an Institute study of their attitudes. This inquiry showed that of the 3,400 faculty members in eight kinds of professional schools queried on the type of curriculum organization they preferred, only 7.6 per cent would have concentrated the general education requirements in the first two years. A very large majority favored running both types of instruction concurrently throughout the entire four or five years.[3]

The success of the integrated arrangement of curricula depends in large measure on a comprehensive guidance program. Students must be analyzed before admission to a professional school in terms of their social and educational backgrounds, their knowledge of the occupational field they wish to enter, and their motivation toward, and their aptitudes in, that field. Moreover, after they have been selectively admitted they must be helped in designing their courses of study, at least in those institutions which do not have a rigidly prescribed curriculum. They must have opportunities, especially in the early years of their college careers, to discuss their likes and dislikes for certain types of instruction. If liberal arts courses are to be considered integral parts of their whole education, they must be counselled about the long-term benefits of instruction in such courses as philosophy, history, and literature, which may appear far removed from professional success or the customary activities of life. Academic, vocational, and personal counselling can determine the success of many of the proposals made for the achievement of the dual goals of professional and civic competence.

Higher Education Should Be an Integral Whole

Any objective observer of the developments in both liberal arts and professional education described in the foregoing pages must be aware that the time has passed—if it ever existed—when the sharp distinctions which partisan advocates of both have attempted to perpetuate can be sustained. The fact is that the liberal arts colleges and the professional schools have for several decades at least been approaching a common pattern in which both provide programs involving liberal arts and professional instruction.

Substantial and immediate progress could be made in the improvement of professional education if its devotees, as well as those who teach in the liberal arts colleges, would recognize these facts of American academic life and accept the view that a professional curriculum is and must necessarily be made up of various types of instruction. Each of the varied instructional units which make the whole curriculum in some measure contribute to

[3] Paul L. Dressel, Lewis B. Mayhew, and Earl J. McGrath, *The Liberal Arts as Viewed by Faculty Members in Professional Schools* (New York: Bureau of Publications, Teachers College, Columbia University, 1959).

the education of the individual for the full range of his life activities. Some of these relate principally to the practice of a calling, others to the exercise of civic responsibilities and still others to personal pursuits. But instruction in all subjects bears in varying degrees on all aspects of the individual's existence. Whitehead asserted the falseness of a dichotomy between liberal and vocational studies when he said:

> The antithesis between a technical and a liberal education is fallacious. There can be no adequate technical education which is not liberal, and no liberal education which is not technical: that is, no education which does not impart both technique and intellectual vision. In simpler language, education should turn out the pupil with something he knows well and something he can do well. This intimate union of practice and theory aids both. The intellect does not work best in a vacuum. The stimulation of creative impulse requires, especially in the case of a child, the quick transition to practice. Geometry and mechanics, followed by workshop practice, gain that reality without which mathematics is verbiage.[4]

In a very penetrating essay on the philosophy of education the same views are elaborated by Theodore M. Greene, Hartley Burr Alexander Professor of Humanities at Scripps College, as he observes that:

> It is an everlasting pity that so sharp a dichotomy has established itself in our minds between liberal education and vocational training, with the false implication that the former is somehow higher, though useless and the latter, useful but somehow crass and demeaning. If these two equally essential preparations for life are thus divorced, a *merely* liberal education will indeed tend to be useless, and a *merely* vocational training, crass. What is obviously needed is a truly liberal academic community in which the study of art and typewriting, of philosophy and accounting, of theology and medicine, of pure and applied science are, though admittedly very different, judged to be equally honorable and valuable in their several ways. In such a community the so-called liberal disciplines would indeed be liberal because they would be studied and taught with an eye to the total enrichment of the life of responsible members of a free society; and in such a community the acquisition of the vocational skills, from the simplest to the most complex, would be equally liberal because they would be taught, not in a spirit of predatory egoism, but in a spirit of deep social concern for the needs of others and for the common good.[5]

Even the staunchest advocates of the liberal arts colleges as they objectively review developments in American higher education in this century would doubtless admit the futility of trying to preserve invidious dis-

[4] Alfred North Whitehead, *The Aims of Education and Other Essays* (New York: The Macmillan Company, 1929), p. 74.

[5] Theodore M. Greene, "A Liberal Christian Idealist Philosophy of Education," *Modern Philosophies and Education*, Fifty-fourth Yearbook of the National Society for the Study of Education, ed. by Nelson B. Henry (Chicago: University of Chicago Press, 1955), p. 119.

tinctions between liberal arts and professional, semiprofessional, and vocational programs. For all intents and purposes the majors in the several academic departments, with their increasingly high degree of concentration within a single discipline or, more commonly, a narrow subdivision thereof, are professional programs. No less than the programs in engineering, pharmacy, and education, they are highly specialized, they stress professional skills, and generally they lead directly to related advanced education or to employment in a specific type of occupation. The majority of students in liberal arts colleges by the time they choose their major have as clear a vocational goal as their fellow students in professional schools. Academic discussions have involved an immense amount of tilting at windmills which could be superseded by profitable debate about real issues if the axiom were accepted that specialization in a limited area of intellectual endeavor and broad general education are inseparable elements in any adequate program of higher education. In the better professional schools, as well as in almost all liberal arts colleges, provision is made for both.

The historical record is clear. The studies of the Institute of Higher Education have shown that professional schools with few exceptions have since the turn of the century broadened their curricula by the addition of instruction offered in liberal arts colleges, either through preprofessional requirements or by incorporating such subjects in their own programs. The liberal arts colleges have on the other hand expanded their offerings to include a great variety of professional, preprofessional, and vocational instruction. Some of these institutions have been more prolific in creating programs of study related to the newer professions and other occupations such as medical technology, accounting, physical therapy, and secretarial science. Others, particularly in the eastern section of the country, have concentrated on the programs which are introductory to advanced professional study, such as the premedical, prelegal, and prebusiness curricula, and to these must be added the majors in the various departments which in these institutions are really the first units in a professional course of study running from the freshman year of college to the last year of a graduate program leading to the Ph.D. degree. In a real sense these institutions, as the further education of their students so clearly shows, are serving a preparatory function rather than providing, as some believe, a liberal education with no vocational objectives. But there is no clear separation of functions among institutions in this regard because most liberal arts colleges provide education for some of the newer professional groups and also for those who intend to become physicians, lawyers, or professors of history, chemistry, or music.

An examination of their present programs reveals that the liberal arts

colleges have as a group gone rather further in professionalizing their programs than the professional schools have in liberalizing theirs. It must be added at once, however, that there are wide divergencies from these practices in both groups of institutions. But since this analysis is concerned primarily with professional schools, our concern here is principally with the variations among them in their efforts to increase the proportion of nonprofessional subjects in their respective curricula.

Undergraduate professional schools vary widely with respect to the degree of their efforts to reach the objectives of a liberal education (as indeed liberal arts colleges themselves vary) and simultaneously to instill the knowledge, the technical skills, and the habits of mind and personality distinctive of a particular occupational group. These institutions run the gamut from those which provide only a modicum of instruction outside the technical field and its supporting disciplines to those in which half or more of the instruction is not directly related to a vocation. The individual professional courses themselves likewise vary arrestingly in their emphasis either on techniques and detailed facts or on broad general principles and analytical intellectual processes. These differences in practice are not unique to any particular profession. They exist in all types of schools. But the over-all view suggests that the more vital institutions in each field are broadening their programs to reach both objectives and attempting to realize the ideal described in the following quotation from Whitehead:

> What we should aim at producing is men who possess both culture and expert knowledge in some special direction. Their expert knowledge will give them the ground to start from, and their culture will lead them as deep as philosophy and as high as art.[8]

Some fear that these developments may obscure the special characteristics of professional groups and thus tend to destroy their unity, their identity, and their cohesiveness. The history of the older professions suggests that the contrary is more likely to occur. Those which have pursued these general lines of development (with individual variations justified by the unique purposes of the institution, the character of its faculty and students, its location, and its support) have more completely served their patrons and the society which sustained them. With each step away from the narrow technical education of the trade school toward a broader program of studies based on theory and principle the older occupational groups have grown in stature and in status. They have not lost qualified students; they have gained them, and higher standards have usually attracted more rather than less capable candidates for degrees.

[8] Whitehead, *op. cit.*, p. 1.

The institutions which adopt similar practices in the future will be providing more fully that generous education required by future generations to live intelligently in an increasingly complicated physical and social world. They will be contributing to the enrichment and the strengthening of this democratic society in which technical competence and its resultant high production, though crucially important in peace and in war, are of no greater significance than informed citizenship and a high sense of patriot obligation. As institutions generally adopt the pattern already in effect among the most enterprising, the ideal of a higher education for high professional competence, for informed and active citizenship, and for a rich and informed personal life will generally be within reach of the undergraduates in professional schools. In this period when all American education is undergoing a questioning reassessment by our people, it is fitting that professional schools and liberal arts colleges as well should dedicate themselves to the realization of these ideals. This education will not be like that designed for the aristocratic society of the days of Greece, Rome, seventeenth-century England, or early America, but it will be appropriate for our contemporary democratic society in which individuals can gain their richest satisfactions and make their fullest contribution to the common good by discharging well their responsibilities of work and of informed and active citizenship. This is an ideal to the realization of which all Americans can proudly dedicate themselves. In its achievement they can also set an example which other nations, particularly those recently freed from the cultural dominance of more mature nations, will recognize as the means of achieving material well being and personal freedom.

Chapter 5

SUMMARY AND CONCLUSIONS

INTERNATIONAL AND DOMESTIC EVENTS MAKE TIMELY A REEXAMINATION of the purposes and the character of professional and of liberal education, and the relationships between them.

▸ Liberal education today can only be understood in terms of its historical development as an aspect of Western culture. A review of this history shows that liberal education has not been an immutable cultural entity but, on the contrary, through the ages has undergone radical change in purposes, content, method, and clientele, the process of change accelerating swiftly in the United States during the past seventy-five years.

▸ The purposes and content of liberal education—in practice, if not in theory—have been extended to include a wide range of professional, semiprofessional, and other vocational instruction. These developments, often unobserved, make timely a reexamination of the relationships of professional to liberal education.

▸ A realistic review of the place of liberal education in American culture shows that its value can no longer be assessed in terms of a specific content or disciplines arranged in particular patterns or sequences. The major outcomes of liberal education—knowledge, intellectual skills, and an integrated and self-directed personality—are only achieved when these goals are clearly visualized and actually incorporated in the learning situation. If they guide the teaching process, these objectives can be reached as readily in the study of professional subjects as in the traditional liberal arts disciplines.

▸ The ancient professions of medicine, law, theology, and teaching, which for many years have required formal higher education as a condition of membership, have in the United States now been joined by a host of other callings, such as pharmacy, nursing, business administration, and journalism. Special curricula have been designed to serve their educational needs. The number of occupations claiming professional status will in-

crease in the future, and it may be expected that educational programs will be developed to provide the appropriate training.

▸ More than half of the first undergraduate degrees now awarded in the United States go to students in professional schools. The percentage in these categories will increase in the future. If these students are to have a liberal education, instruction must be shaped to that end.

▸ The meaning of "profession" is not entirely clear, and no precise definition is at present possible. The economic, educational, and social factors which influence professional status in the public mind are complex and interrelated; but that the amount and kind of education—both general and technical—required of the prospective members of a particular occupational group determine its social status is incontestable.

▸ The education of the various professions has evolved through five rather clear though not discontinuous steps from the apprenticeship, the first and primitive stage, to university training, the most advanced stage of development involving both considerable technical and general education. Some of the occupations which have only recently claimed professional status—for example, business management—exhibit all five stages of education among their membership. All groups, however, appear to be moving at varying speeds toward the dual goals of general education for citizenship and for professional competence. In the future to a greater degree than at present it may be expected that the professions which reach high social status and acceptance as preferred occupations will be those which prepare their members, not only for the specific responsibilities of their calling, but also for the more inclusive activities of civic and personal life. The history of education among the older professional groups can be of considerable benefit to occupational groups now seeking a clear and generally accepted standing as professions.

▸ In the abstract, liberal education today has three dominant purposes: to instill knowledge; to cultivate intellectual skills; and to nurture the traits of personality and character basic to a reasoned and responsible life. The emphasis in the teaching profession since the breakup of the standard liberal arts curriculum of the late nineteenth century, occasioned by the growth of specialized knowledge and the growing dominance of graduate education, has been increasingly placed on the first of these objectives, that is, on the creation and dissemination of knowledge.

▸ If this and succeeding generations are to be prepared to live intelligent lives, confident of their own judgments, and dedicated to the improvement of the human lot, greater stress must be placed in undergraduate professional schools and in liberal arts colleges on the two other major purposes of higher education—the cultivation of intellectual skills and the

development of a reasoned outlook on life motivated by the highest ideals of human conduct.

▸ Since most students in undergraduate professional schools will not attend liberal arts colleges for any part of their higher education, these three major aims of liberal education must be included within the over-all objectives of professional education. The graduate of a professional school (or of a liberal arts college) which provides little or no education other than that related to technical competence is at best an intellectually limited individual. The very character of his higher education will consign such a person to a lower level of social incompetence and personal development.

▸ To achieve all three major goals of liberal education professional education ought to be reexamined to determine whether the present curricula, excessively burdened as most of them are with highly technical subject matter, are for that very reason (1) failing to provide the broad technical education needed in the increasingly complex activities of professional practice; (2) neglecting to provide the rounded general education required by all who occupy positions in society reserved for those with higher education; (3) unwittingly causing students to believe that the narrow educational programs they have completed have prepared them for the further professional and personal growth essential to continued success as workers, as citizens, and as persons.

▸ Programs in professional schools ought to integrate technical and general education in the sequence of studies extending throughout the period of higher education, and the purposes of liberal education ought in part to determine the selection of subject matter, classroom practices, and evaluating procedures.

▸ The same broad purposes ought to prevail in liberal arts colleges, which through the excessive proliferation of specialized courses have in the main become hardly less preoccupied with the cultivation of occupational skills than their counterparts in professional education. The differences in the emphasis placed on the three major outcomes of liberal education described in this monograph are as great among liberal arts institutions as among professional schools. The question may well be raised whether the invidious distinctions between liberal and professional education should not now be abandoned. Higher education could then be recognized, as it should be, as having certain universal functions which should be common to all curricula regardless of the administrative divisions which for convenience now separate undergraduate students in terms of their vocational objectives.

▸ In any event, if the statements of the educators concerned can be taken at face value, there is now an intense interest in enlarging the scope

of professional education to include more instruction not directly related to a specific occupation. It is their wish, too, to broaden professional studies by shifting emphasis in such instruction from facts and ready-made procedures to principles and the skills of applying them to the ever changing conditions of life.

▸ The efforts of professional schools are often frustrated in the first of these efforts by the unavailability of suitable general courses in the liberal arts colleges. If the departments having responsibility for general education in the traditional liberal arts disciplines will now provide the nonspecialized type of instruction needed by professional students, significant advances can be made in the years immediately ahead in extending the scope of professional education.

▸ Never in the history of Western European culture has it been more urgently necessary for those who have primary responsibility for educating youth for a calling and for those whose primary obligation it is to provide education for the more inclusive activities of life, to work together in designing a more adequate higher education for the men and women who in the years ahead are going to determine our destiny as a people. This is clearly a time for the members of the profession of education to submerge personal, subject matter, and institutional interests in the fateful effort to provide a more generous, more vital, and, in the best sense of the term, more useful higher education. Only as students in professional schools, and in liberal arts colleges as well, see the relationships between their work and the prosperity and welfare of our culture, and only as they have mastered the knowledge and the intellectual skills to deal effectively and courageously with the urgent problems of our day, can American higher education be said to have fulfilled its ordained mission. This is the challenge which now faces those charged with education for the professions in the United States.